

# Digital Equity in Ohio: What's Health Got to Do with It?

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# Disclosures

- Current consultations with Digital Equity Institute, Tempe, AZ on state and county DE initiatives; Arizona State University Digital Literacy Certificate Class, Literacy Minnesota (Northstar); Digitunity, and national health technology companies.
- Recent or current consulting engagements with health systems, libraries and higher education institutions in Cleveland and across the nation; DigitalC, the National Digital Inclusion Alliance, The Digital Medicine Society, & The Telehealth Equity Coalition.
- Volunteer Board service with Network of Digital Evidence for Health (NODE.Health); Connect Your Community and Connected Insights.

# DIGITAL INCLUSION

LEADERSHIP

CERTIFICATE



## PROGRAM OVERVIEW

The Digital Inclusion Leadership Certificate is the first-ever professional development program for digital inclusion professionals.

Taught by technology, policy, local government, and digital inclusion leaders, this online certificate will create the expert workforce needed to ensure true digital equity.

## CURRICULUM

Through five online modules, the curriculum covers the broad array of topics a successful digital inclusion leader will need:

- Intro to Digital Inclusion
- Intro to Network Technology
- Evaluating Digital Inclusion Community Resources
- Digital Inclusion Policy Foundations
- Impacts and Applications

See back for more information.

## PARTNERSHIP

The Digital Inclusion Leadership Certificate is presented in partnership by:

Arizona State University's  
Center on Technology, Data  
and Society, promoting digital  
equity for public good

and

The Marconi Society,  
encouraging a connected  
world where information and  
communications technologies  
empower everyone to reach  
their full potential.

## LECTURERS

Modules are taught by a cross-disciplinary set of experts, including key Ohio leaders:

- Rolando Alvarez (DigitalC)
- Bill Callahan (Connect Your Community)
- Joshua Edmonds (Digital C)
- Lev Gonick (Arizona State University)
- Kevin Kelley (former Cleveland City Council member)
- Jeffrey Patterson (Cuyahoga Metropolitan Housing Authority)
- Rebecca Ranallo (Cuyahoga County Public Library)
- Amy Sheon (Public Health Innovators)
- Angela Siefer (National Digital Inclusion Alliance)
- Leon Wilson (Cleveland Foundation)



## PILOT COHORT SPRING 2023

REGISTRATION:

<https://techdatasociety.asu.edu/content/digital-inclusion-leadership-certificate#>

# Talk Objectives

- Understand health-related aspects of Digital Equity Plans
  - Understand how broadband affects health
- Promote health and digital inclusion ecosystem synergy
  - Increase DIE understanding of key health/healthcare frameworks
  - Incorporate digital inclusion objectives and methods in healthcare

# NOFO-Related Health Opportunities

- Community anchor institutions can **assess and address barriers to digital equity**
- Exemplify impactful internet **adoption** through health uses
- Show measurable **impact of internet on health outcomes**

# Healthcare as Community Anchor Institutions



The NEW ENGLAND  
JOURNAL of MEDICINE

N Engl J Med 2023; 388:97-99

DOI: 10.1056/NEJMp2213465

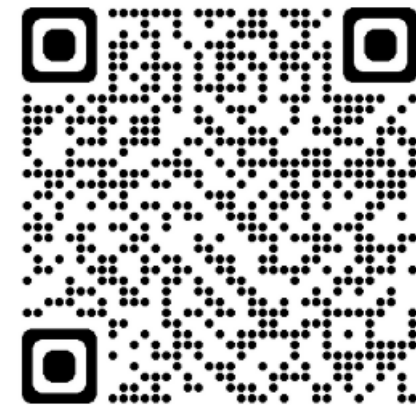
January 12, 2023

## The Anchor Strategy — A Place-Based Business Approach for Health Equity

David A. Ansell, M.D., M.P.H., Kaitlyn Fruin, M.D., Redia Holman, Ayesha Jaco, M.A.M., Bich Ha Pham, J.D., and David Zuckerman, M.P.P.

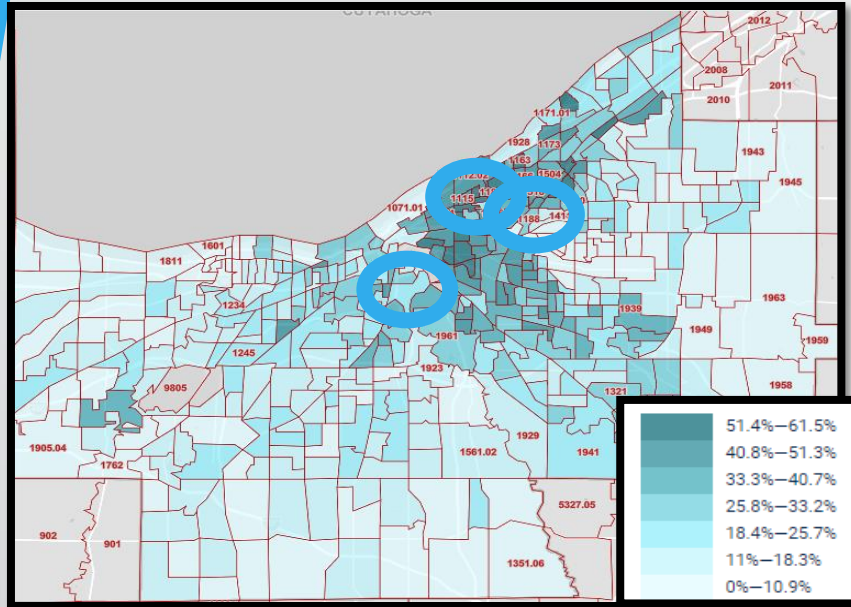


HEALTHCARE  
ANCHOR NETWORK





# Healthcare Anchors Contribute to Last Mile Access



DECEMBER 3, 2020 / NEWS RELEASES

## Cleveland Clinic and its Community Partners to Help Provide Affordable Broadband to Cleveland Neighborhood

Cleveland is America's least connected city; partnership is an effort to close the digital divide



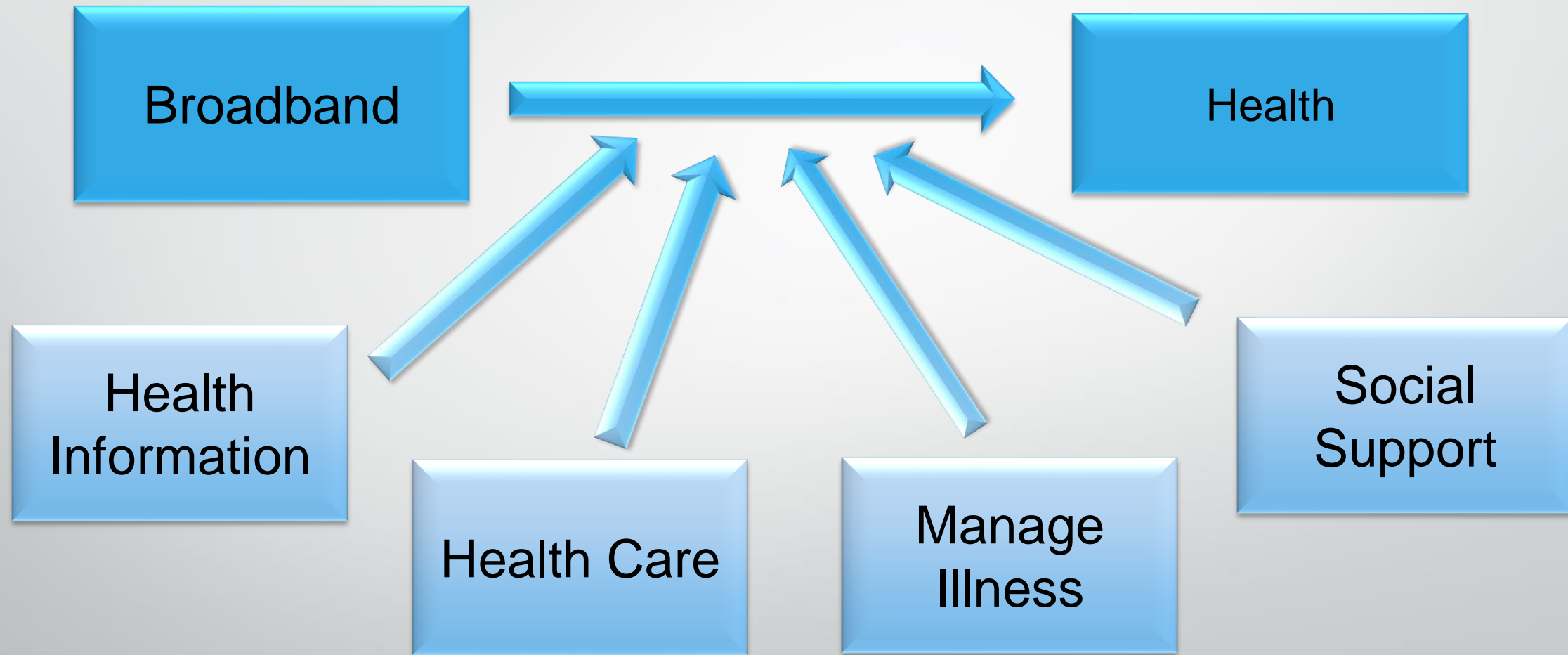
FCC Selects MetroHealth to Expand High-Speed, Low-Cost Broadband Access to Low-Income Patients Residing in CMHA Housing

***Greater Cleveland Digital  
Equity Coalition Health  
Committee***

**UH partnering with PCs for People to help  
give access to those in need of tele-health**



# Broadband and Health: Direct Impact





# Broadband Benefits: Telehealth Example

## Direct Impact

- Telehealth
  - Obtain care safely and conveniently
  - Lower cost to deliver
  - Fewer no-shows
- Asynchronous:
  - Store and forward or text
  - Text based

## Equity Dimension

- Especially valuable for people with low wage jobs, less flexibility
- Greater choice of providers
- Can engage access services
- But requires device, connectivity, skills and technical support

# Broadband-Enabled Digital Health Examples

Telehealth  
Wearables  
Patient portals  
Apps  
Smart speakers  
Remote monitoring  
Environmental sensors



# Chronic Disease Impact from Apps, Wearables & Remote Monitoring

- Growing evidence of efficacy
- Ubiquitous tools
- Especially useful for chronic illness

344

Avg # times/day  
people check their  
smartphones



JAMA  
Network | **Open**

Original Investigation | Cardiology

**Assessment of Hypertension Control Among Adults Participating  
in a Mobile Technology Blood Pressure Self-management Program**

Tomer Gazit, PhD; Michal Gutman, BSc; Alexis L. Beatty, MD, MAS

10.1001/jamanetworkopen.2021.27008

# Sensors & Medication Trackers Improve Health Outcomes

## How Louisville Is Using GPS to Control Asthma

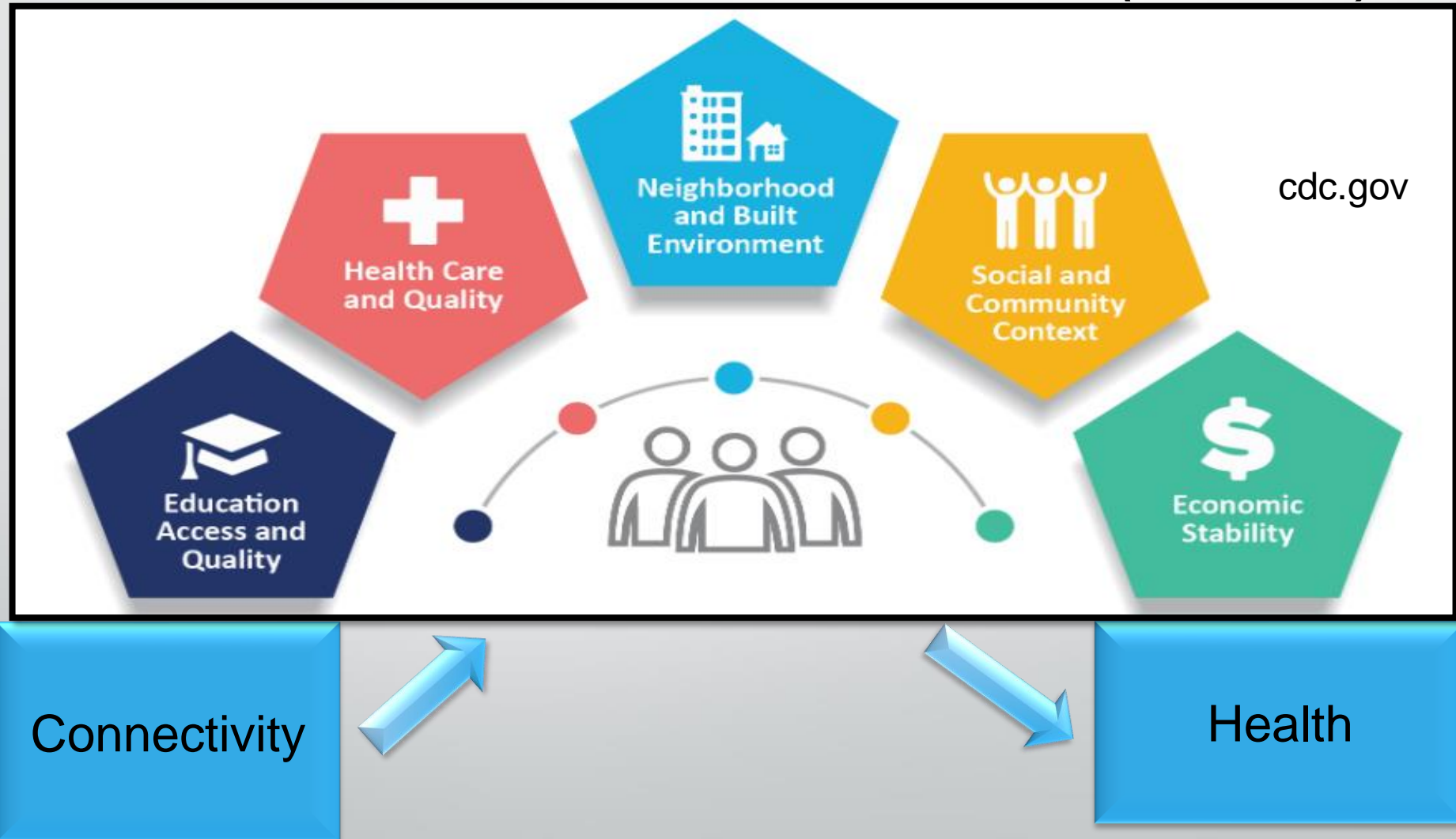
The Kentucky metro has some of the worst air quality in the country. And it's crowdsourcing a cure to help its large population of sufferers.

<https://www.bloomberg.com/news/articles/2017-08-09/louisville-asthma-attacks-cut-down-by-propeller-sensors>

"They were struck to find that ozone, the main ingredient in smog, kicked up inhaler puffs across the city, a relationship that had never been charted before. Ozone amplified asthma risk in neighborhoods well beyond the west side, tracking most noticeably with the busy roads and highways that quilt the city."

Barrett, Meredith A., et al. "Effect of a mobile health, sensor-driven asthma management platform on asthma control." *Annals of Allergy, Asthma & Immunology* 119.5 (2017): 415-421.

# Indirect Effects of Broadband on Health: *via Social Determinants of Health (SDOH)*

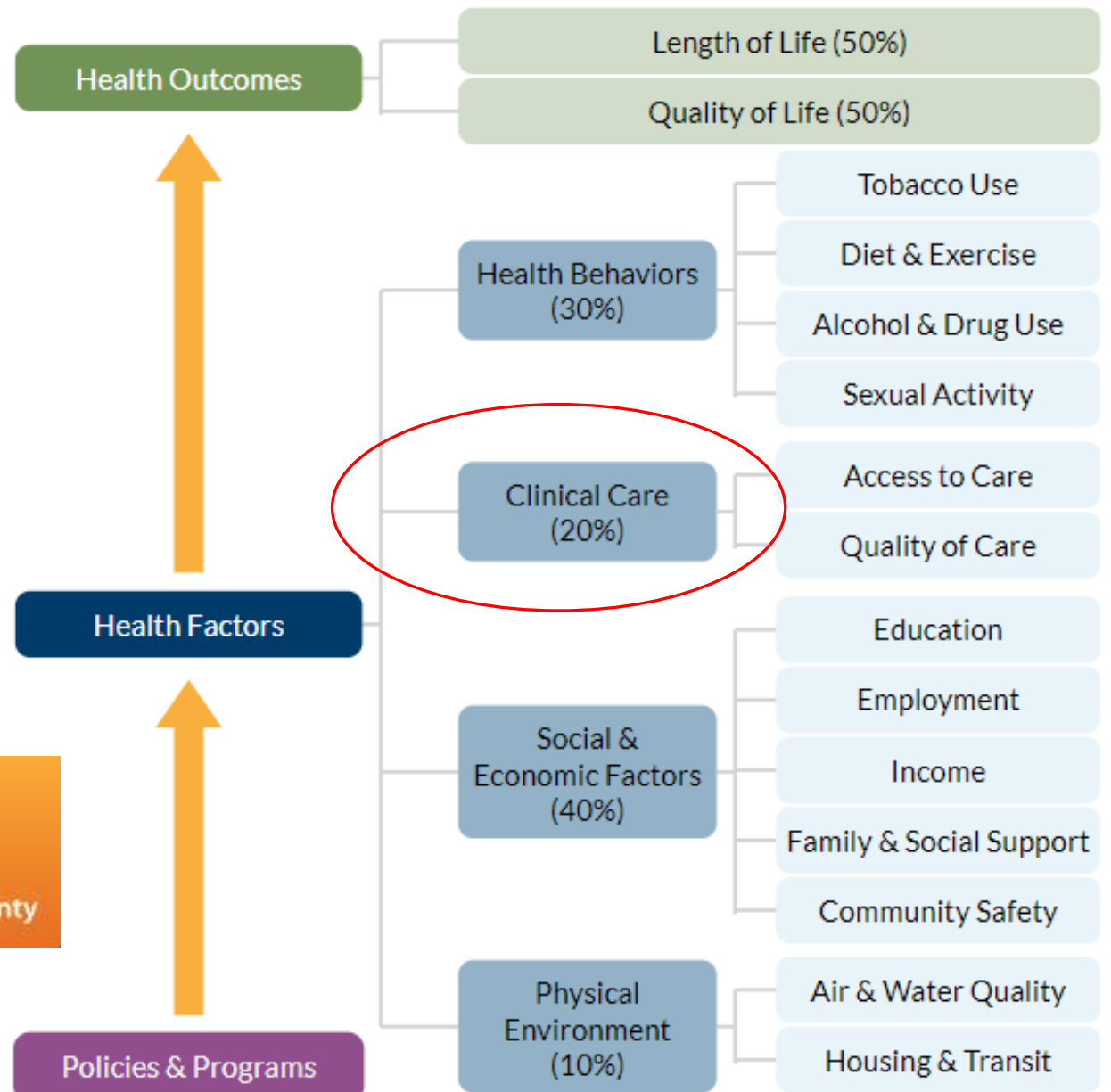




Health care has  
very little to do with  
health

## County Health Rankings & Roadmaps

Building a Culture of Health, County by County



County Health Rankings model © 2014 UWPHI



# Social Determinants of Health

Digital  
required or  
facilitates

Economic Stability	Neighborhood and Physical Environment	Education	Food	Community and Social Context	Health Care System
Employment	Housing	Literacy	Hunger	Social integration	Health coverage
Income	Transportation	Language	Access to healthy options	Support systems	Provider availability
Expenses	Safety	Early childhood education		Community engagement	Provider linguistic and cultural competency
Debt	Parks	Vocational training		Discrimination	Quality of care
Medical bills	Playgrounds	Higher education		Stress	
Support	Walkability				
	Zip code / geography				

# Digital inclusion as a social determinant of health

Cynthia J. Sieck<sup>1,2</sup>✉, Amy Sheon<sup>3</sup>, Jessica S. Ancker<sup>4</sup>, Jill Castek<sup>5</sup>, Bill Callahan<sup>6</sup> and Angela Siefer<sup>6</sup>

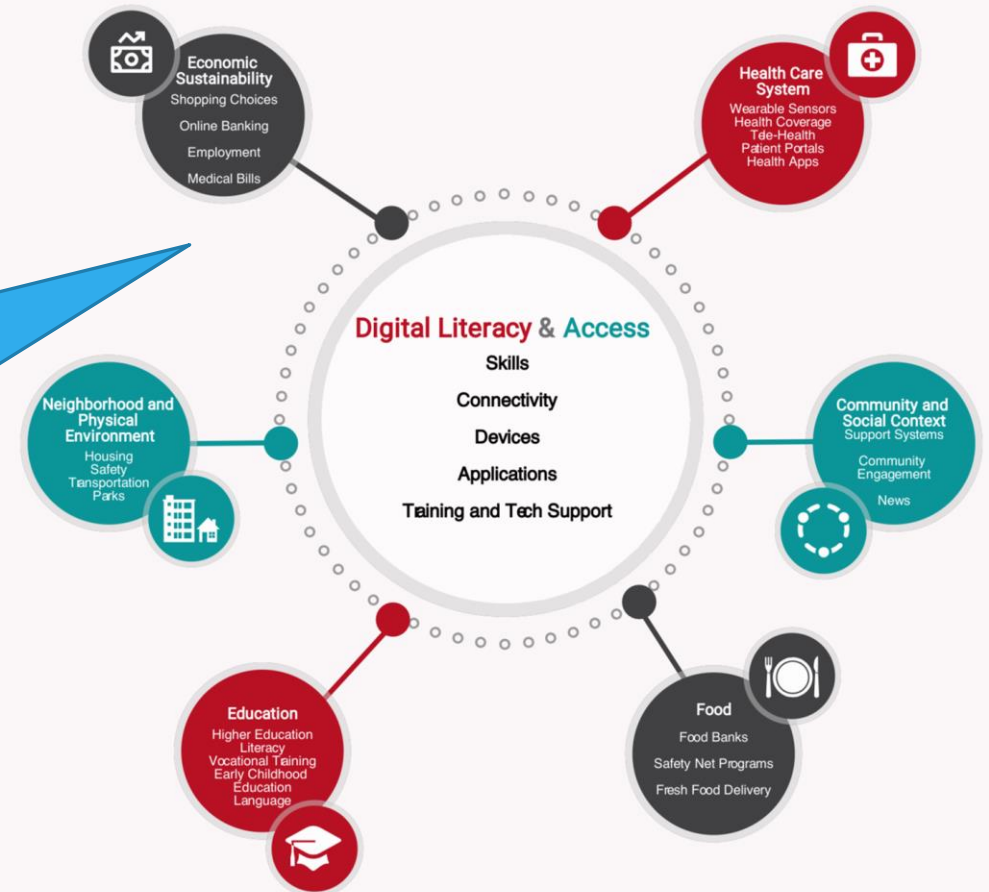
*npj Digital Medicine* (2021)4:52; <https://doi.org/10.1038/s41746-021-00413-8>

[www.nature.com/npjdigitalmed](http://www.nature.com/npjdigitalmed)

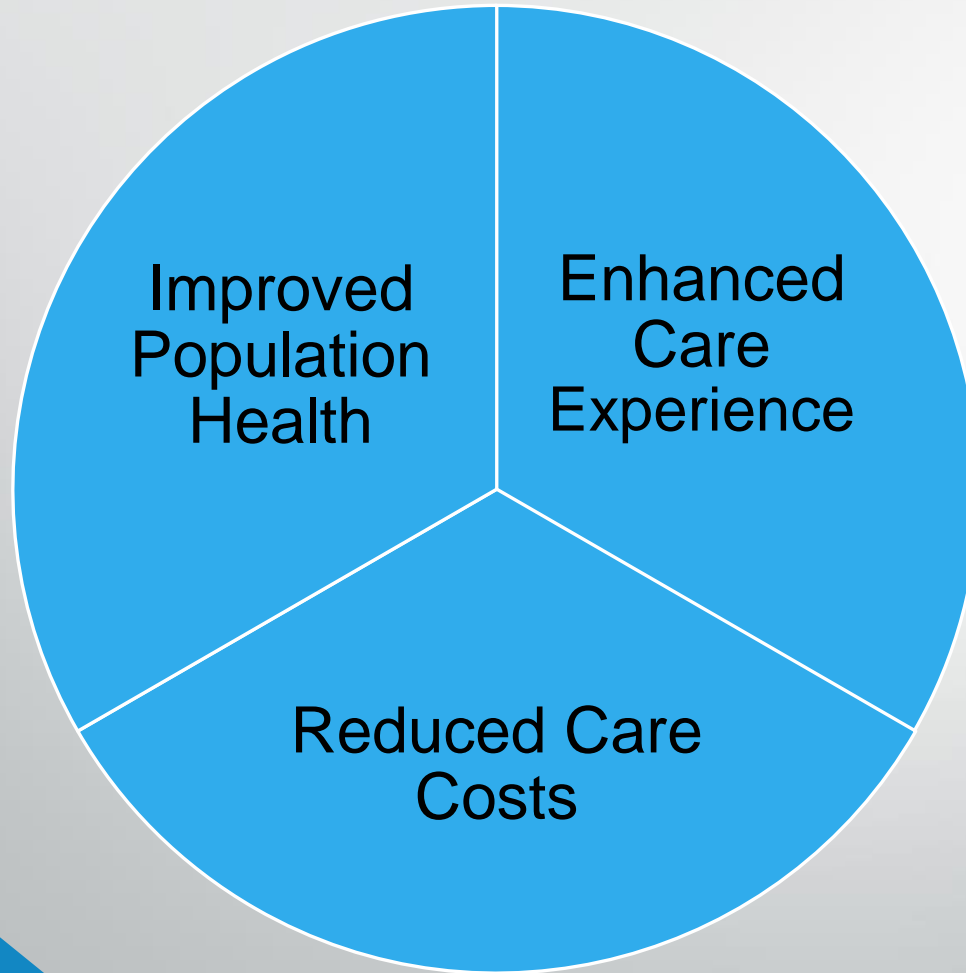
Ohio Connected

Ohio & Digital Inclusion experts

“Digital literacies and internet connectivity have been called the ‘super social determinants of health’ because they address all other SDOH”



# Context for Digital Health Impact on Health Care: *Health Care Triple Aim Framework--2007*



[HEALTH AFFAIRS](#) > [VOL. 27, NO. 3](#): HEALTH REFORM

REVISITED

PUBLISHED: MAY/JUNE 2008

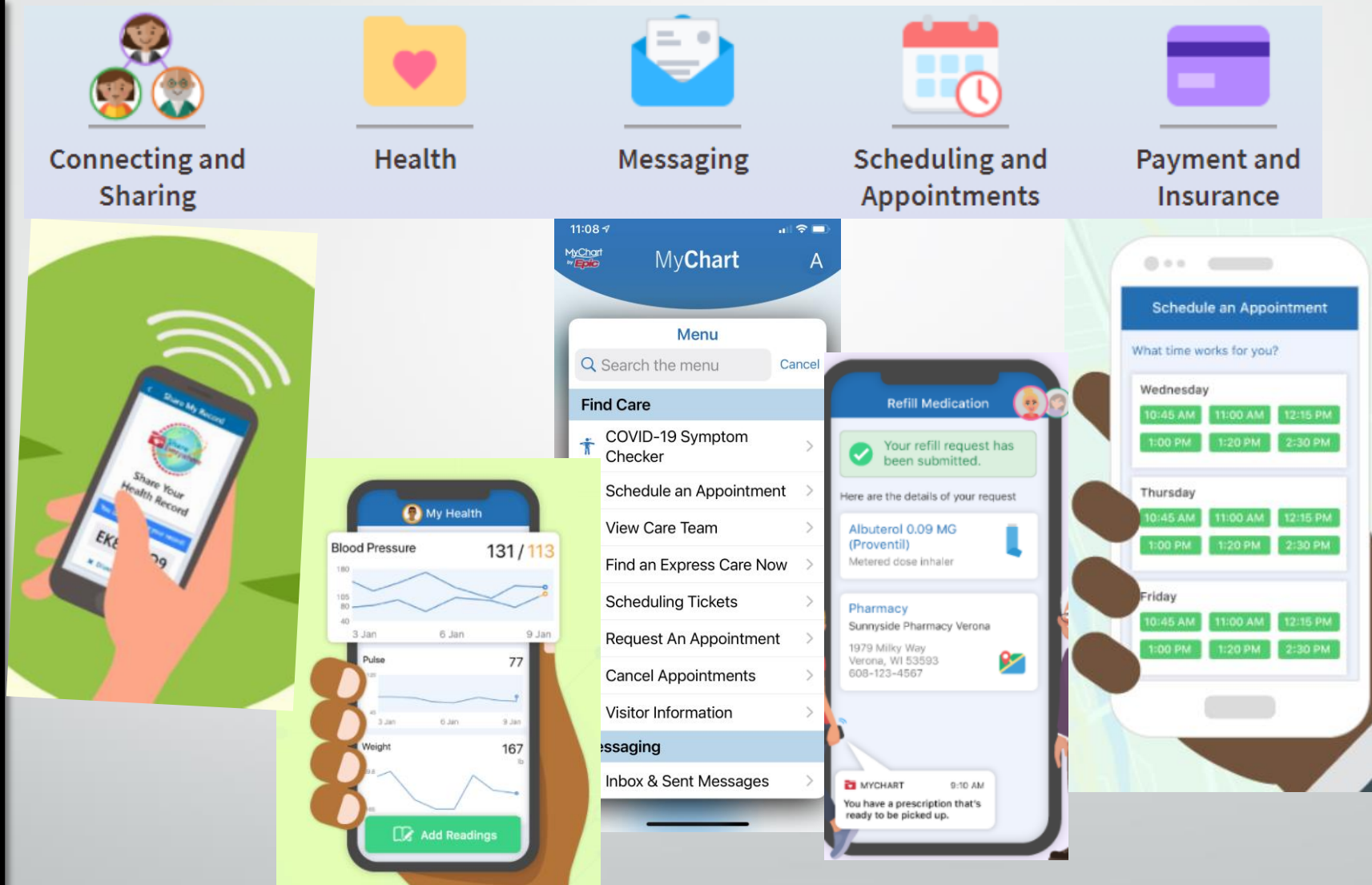
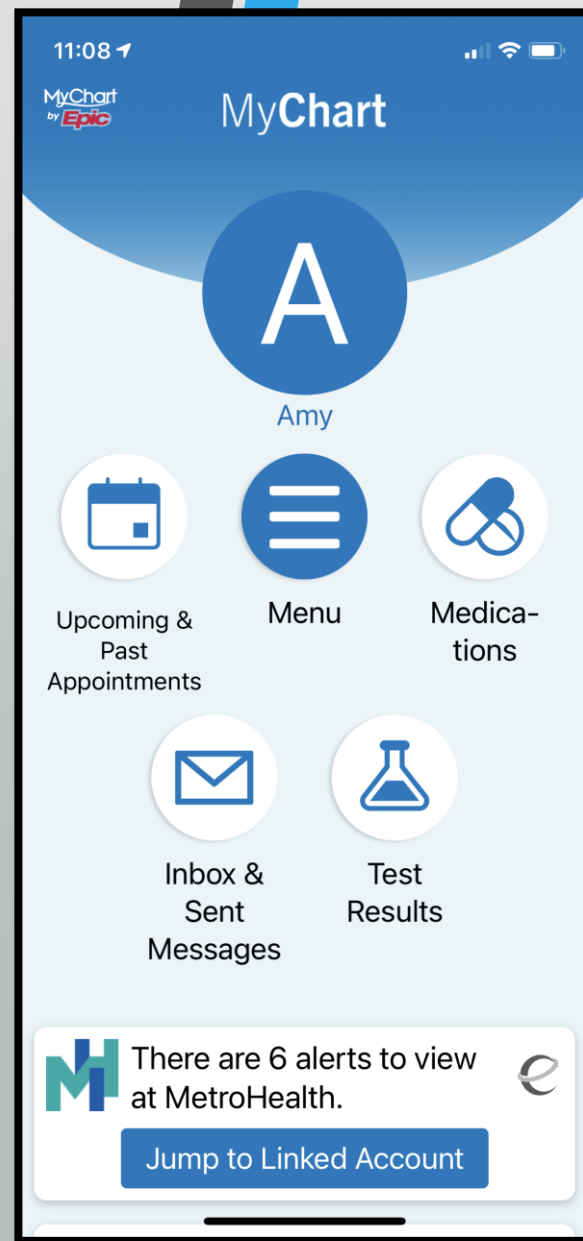
## The Triple Aim: Care, Health, And Cost

[Donald M. Berwick](#), [Thomas W. Nolan](#), and [John Whittington](#)



<https://www.healthaffairs.org/doi/10.1377/hlthaff.27.3.759>


# Patient Portal to Electronic Health Record





<https://www.mychart.com/>

# Patient Portal Benefits

## Find Care

 COVID-19 Symptom Checker

 Schedule an Appointment

 E-Visit

 View Care Team

 Find an Express Care Now

 Scheduling Tickets

 Request An Appointment

 Cancel Appointments

 Visitor Information

## Resources

 Search Medical Library

 Research Studies

 Education

 Resources

 Visitor's Pledge

## Account Settings

 Personal Information

 Account Settings

 Personalize


 Change Your Shortcuts

 Communication Preferences

## My Medical Record

 COVID-19


 To Do

 Upcoming & Past Appointments

 Test Results

 Medications

 Health Summary

 Plan of Care

 Preventive Care

 Questionnaires

 Upcoming Orders

 Medical and Family History


 My Document Center

 Advance Care Planning

 Current Health Issues

 Immunizations

 Allergies


 Who's Accessed My Record?

 Wallet Card

## Messaging

 Inbox & Sent Messages

 Message My Doctor

 eVisit

 Letters

 News For You


 Technical Support


 Request Access for Your Child

## Eyecare Center

 Last Everlast Prescription


## Billing

 Account Summary

 Apply for Financial Assistance

 Estimates

## Insurance

 Insurance Summary

## Sharing

 Share My Record

 Share Everywhere

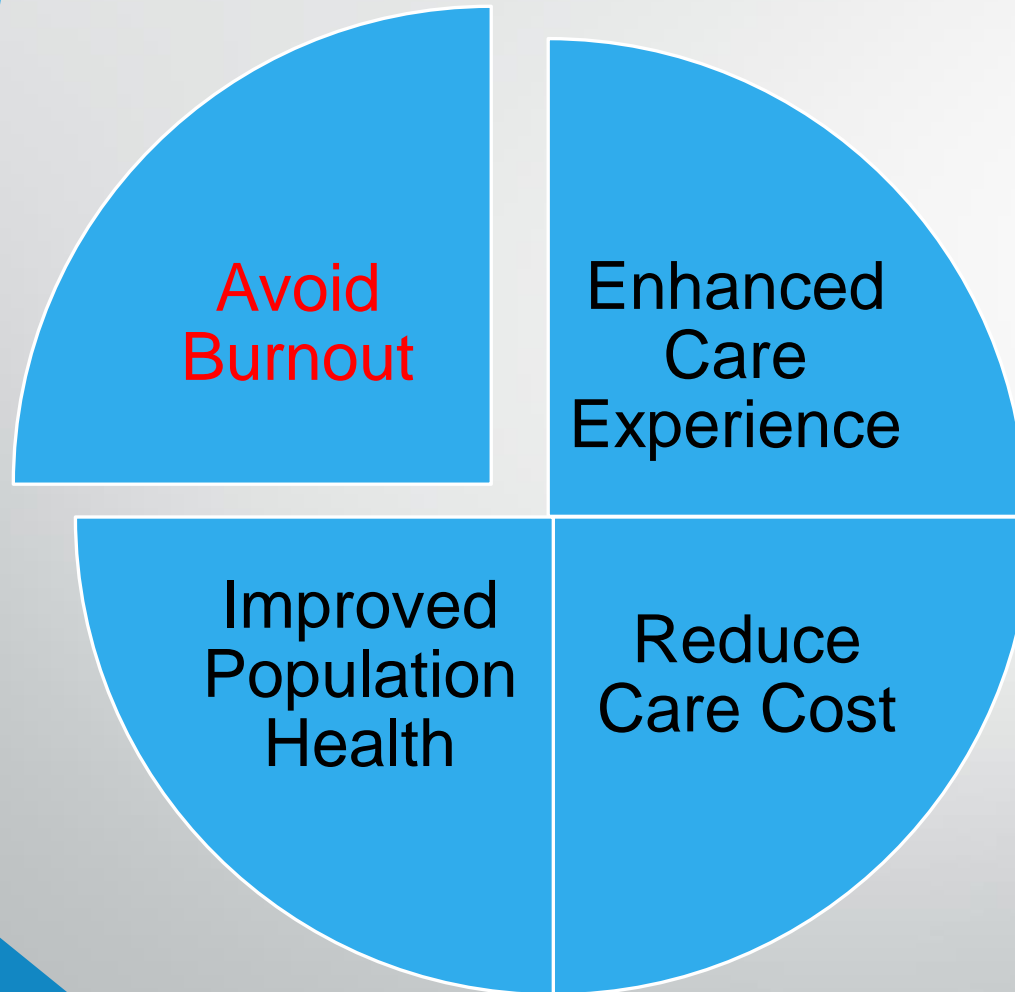
 Link My Accounts

 MyChart Central / Lucy

 Linked Apps & Devices



# Health Care *Quadruple* Aim--2014



[Ann Fam Med.](#) 2014 Nov; 12(6): 573–576.

PMCID: PMC4226781

doi: [10.1370/afm.1713](https://doi.org/10.1370/afm.1713)

PMID: [25384822](https://pubmed.ncbi.nlm.nih.gov/25384822/)

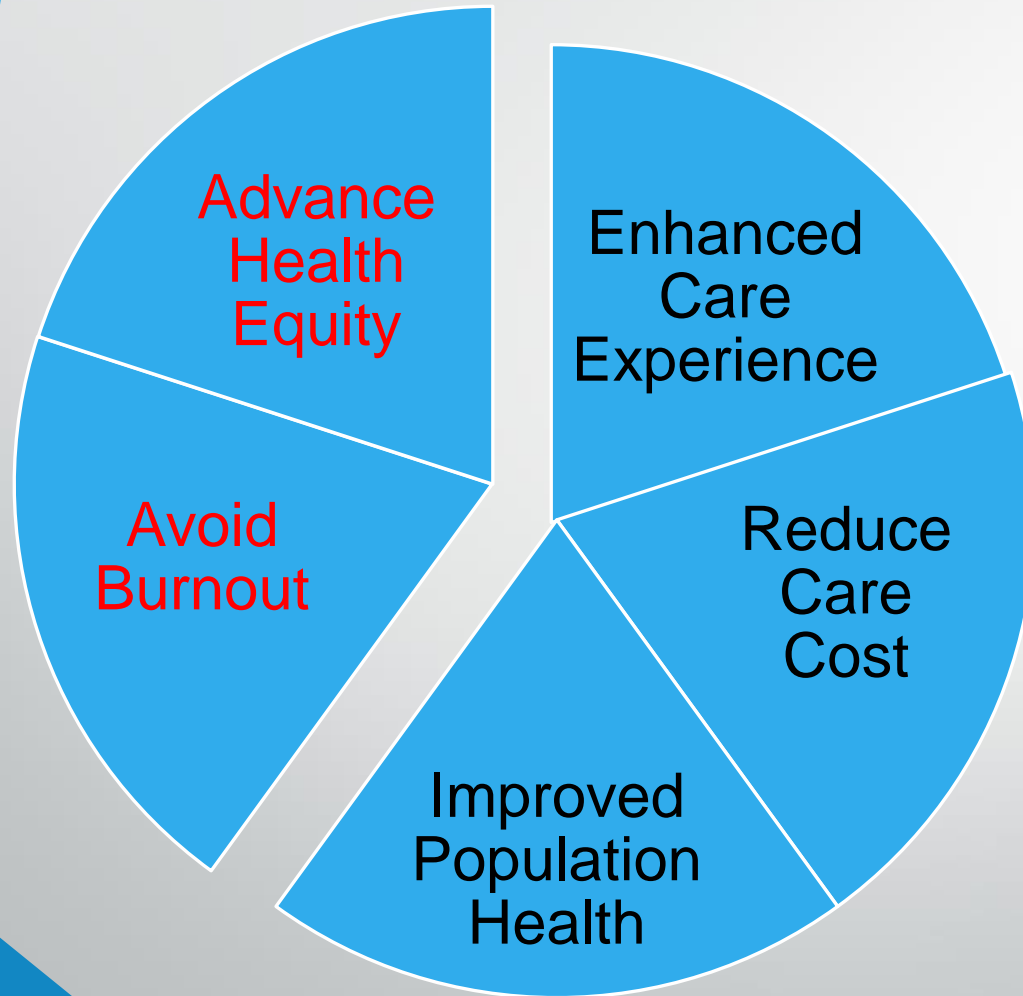
From Triple to Quadruple Aim: Care of the Patient Requires Care of the Provider

[Thomas Bodenheimer](#), MD<sup>1</sup> and [Christine Sinsky](#), MD<sup>2,3</sup>

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4226781/>



# Health Care *Quintuple* Aim--2022



January 21, 2022

## **The Quintuple Aim for Health Care Improvement**

A New Imperative to Advance Health Equity

Shantanu Nundy, MD, MBA<sup>1,2</sup>; Lisa A. Cooper, MD, MPH<sup>3,4</sup>; Kedar S. Mate, MD<sup>5,6</sup>

<https://jamanetwork.com/journals/jama/fullarticle/2788483>

# Growing awareness of need for equity



By [Apoorva Mandavilli](#)

Published June 1, 2021 Updated June 2, 2021

**The New York Times**

## *Editor of JAMA Leaves After Outcry Over Colleague's Remarks on Racism*

Dr. Howard Bauchner will step down after another editor suggested “taking racism out of the conversation” on a journal podcast.



The NEW ENGLAND  
JOURNAL of MEDICINE

Perspective

## Tackling Implicit Bias in Health Care

Janice A. Sabin, Ph.D., M.S.W.

July 14, 2022

Eliminate preventable differences in health and opportunity for population groups that have been historically marginalized or disadvantaged

# Need for DI Perspective in Health Care

The New York Times

By Benjamin Ryan

Jan. 24, 2023

## *Emailing Your Doctor May Carry a Fee*

More hospitals and medical practices have begun charging for doctors' responses to patient queries, depending on the level of medical advice.

<https://www.nytimes.com/2023/01/24/health/emails-billing-doctors-patients.html>

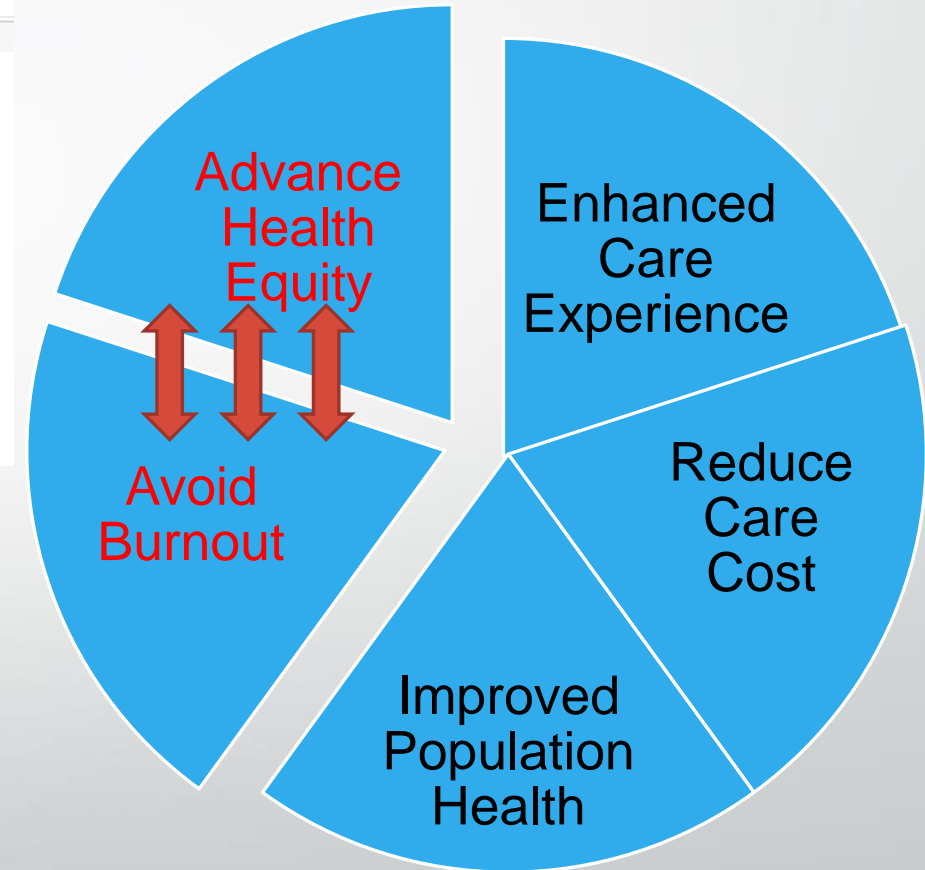
[MyChart Message Fees](#)

Blog

🕒 November 15, 2022 | 👤 [Amy Sheon](#)

MyChart message fees have equity consequences

<https://www.publichealthinnovators.com/blog/>





# The Joint Commission

## New Accreditation Requirements to Reduce Health Disparities

- Health Care Equity (HCE) Certification program effective July 1, 2023 to recognize hospitals that strive to provide equitable care, treatment, and services.
- Certification may be a condition for Medicare & Medicaid.
- Must assess and address HRSNs\*

\*Health Related Social Needs –preferred term for how SDOH affect individuals; conditions that “may exacerbate poor health and quality-of-life outcomes when they are not met.”

<https://www.jointcommission.org/resources/news-and-multimedia/newsletters/newsletters/joint-commission-online/jan-11-2023/just-launched-health-care-equity-certification-program/>

# New CMS Requirements re Health Equity

- 1/4/23 New Medicaid guidance allows paying for services “in lieu of a service or setting covered under state Medicaid plans”  
<https://www.medicaid.gov/federal-policy-guidance/downloads/smd23001.pdf>
- Medicare reimbursement for time to help patient set up remote monitoring and reviewing patient-submitted health data
- Healthcare Quality Measures emphasizing health equity



## **Illuminate**

Listen and amplify the voices of underserved communities and identify ways to eliminate disparities.



## **Elevate**

Promote actions that reduce disparities and propel health care toward true equity for everyone.

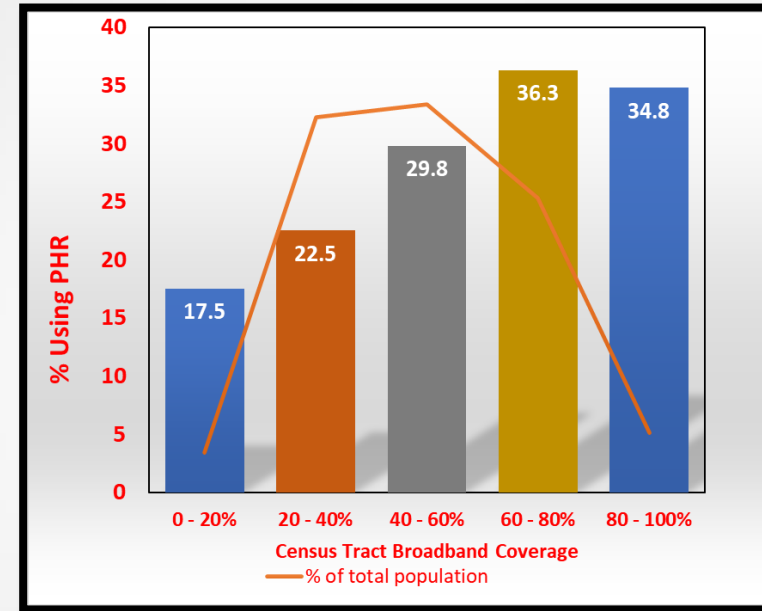
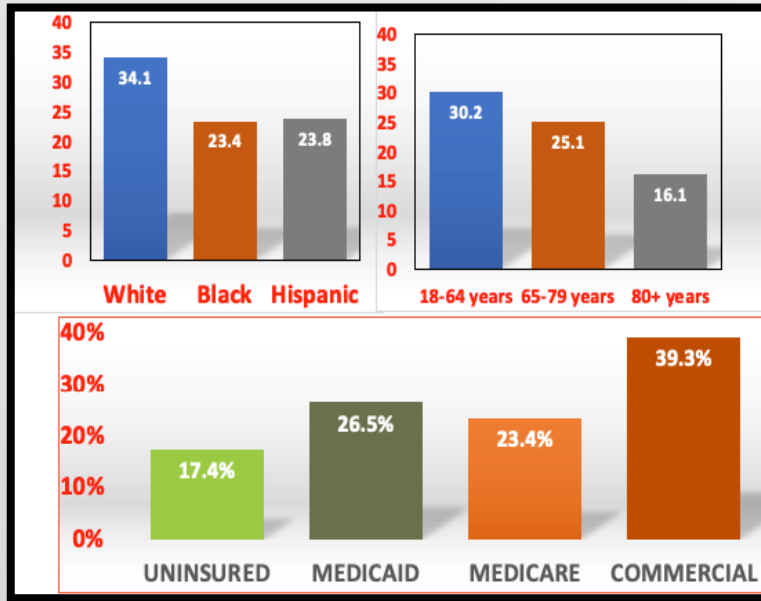


## **Investigate**

Be intentional in assessing and identifying areas with unwarranted differences while pointing out historical bias.

<https://www.ncqa.org/health-equity/>

# <2017 Recognition of Portal Use Disparities



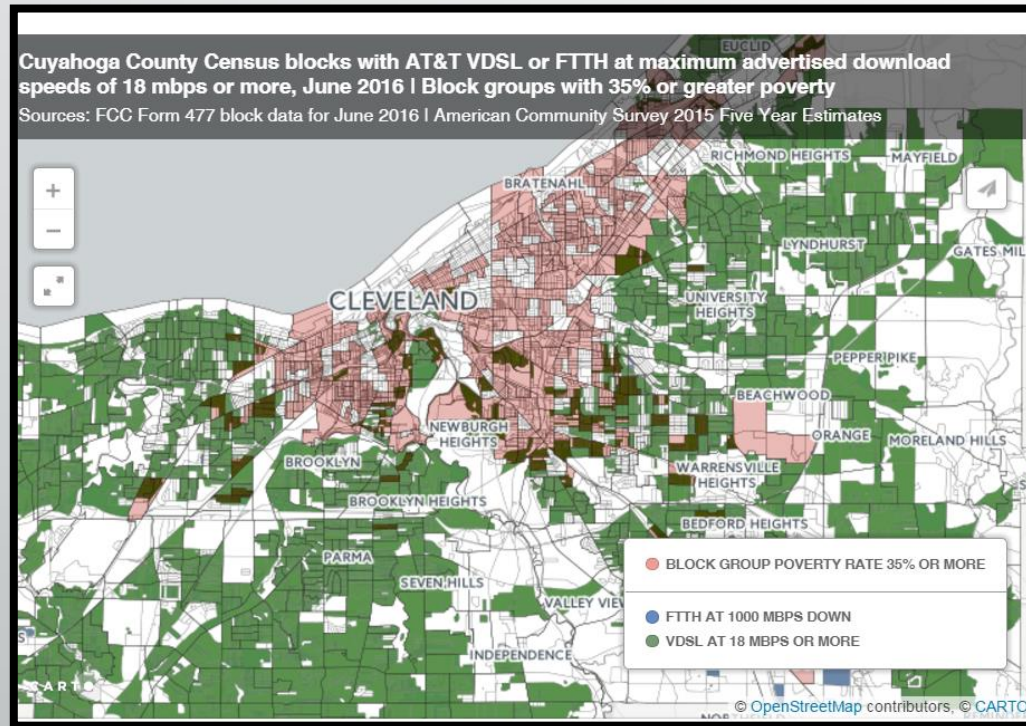
MyChart use: 243,248 ambulatory care pts

Perzynski A, Roach M, Shick S, Callahan, B, et al, Patient portals and broadband internet inequality, *Journal of the American Medical Informatics Association*, 24 (5), 2017.

<https://doi.org/10.1093/jamia/ocx020>



# Digital Redlining: First Identified in Cleveland, 2017

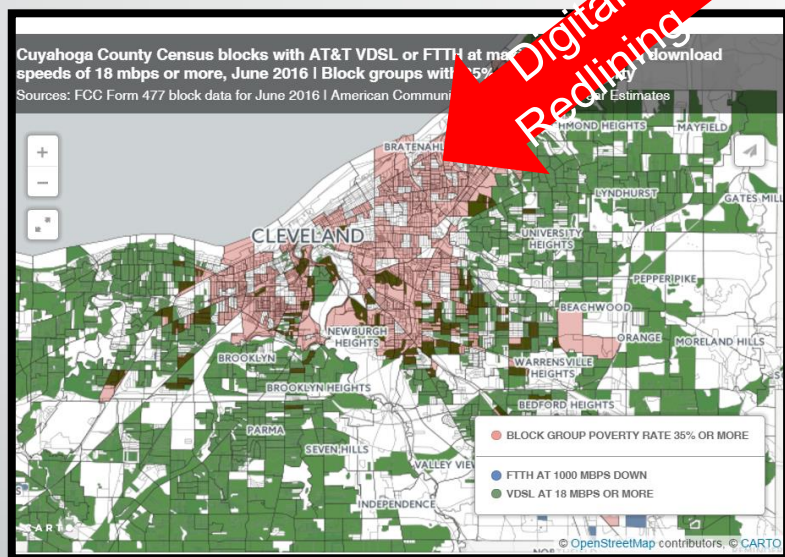


<https://www.digitalinclusion.org/blog/2017/03/10/atts-digital-redlining-of-cleveland/>

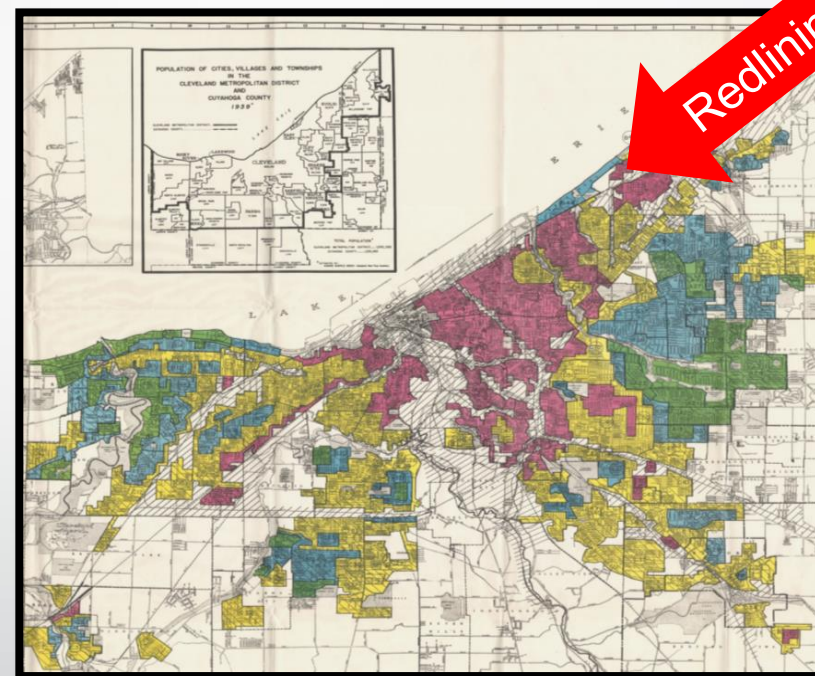
*“AT&T has systematically discriminated against lower-income Cleveland neighborhoods in its deployment of home internet and video technologies over the past decade”*  
—Bill Callahan



# ...The culprit: historical discriminatory lending...



<https://www.digitalinclusion.org/blog/2017/03/10/att-s-digital-redlining-of-cleveland/>

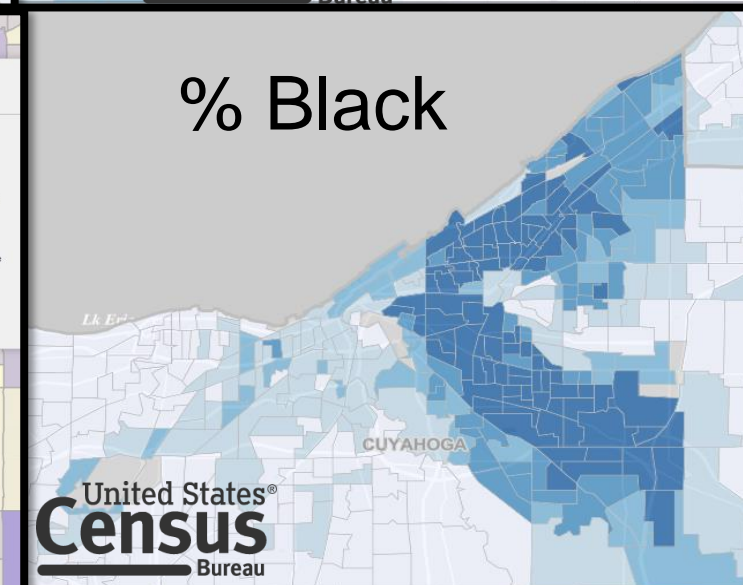
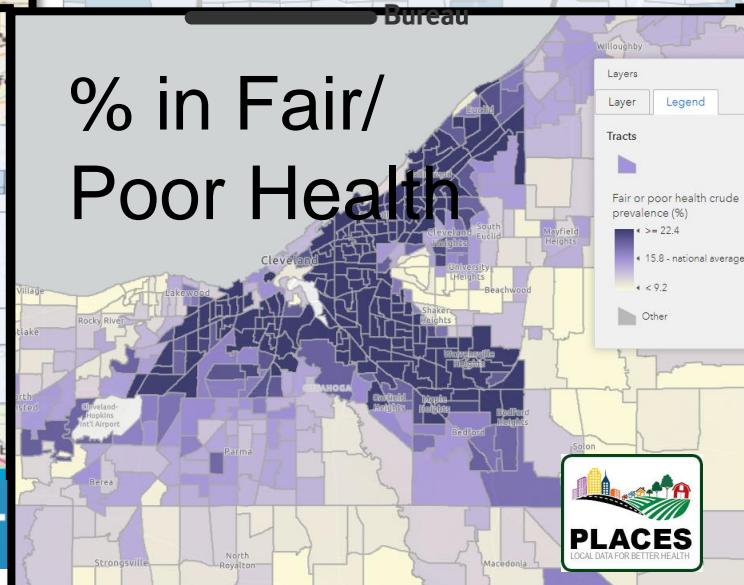
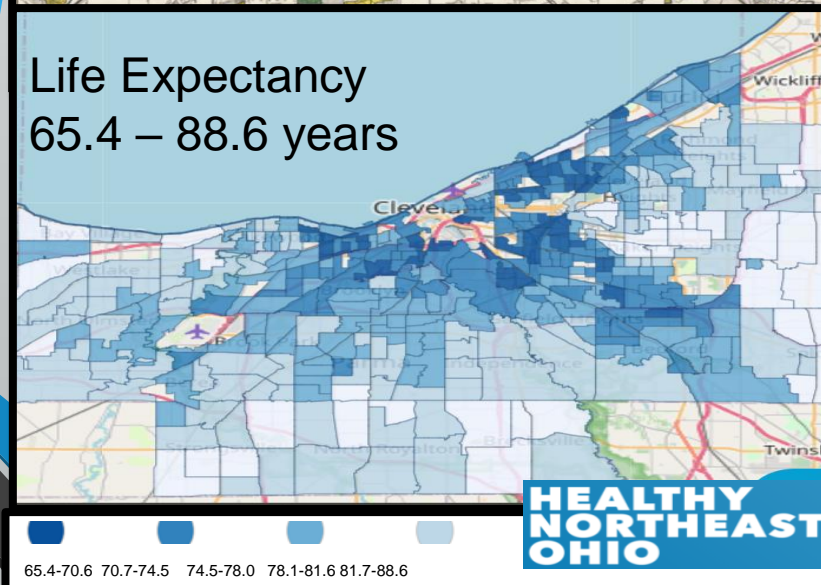
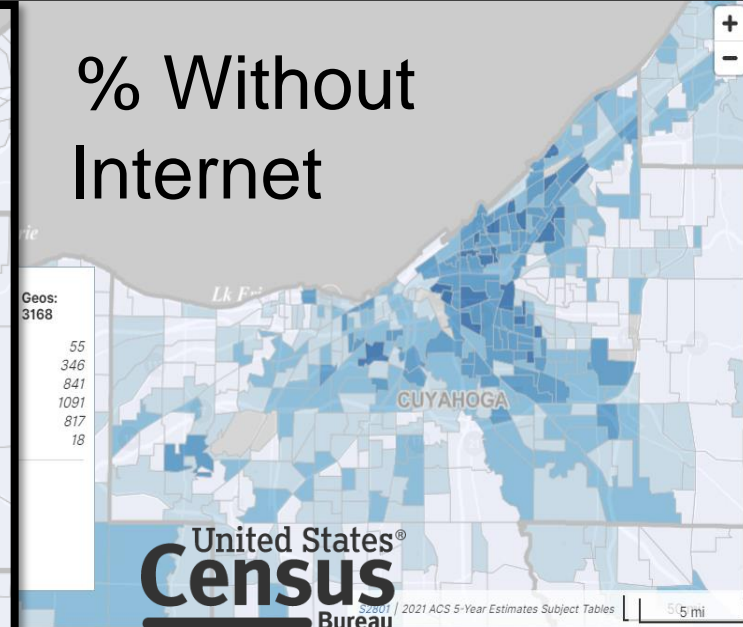
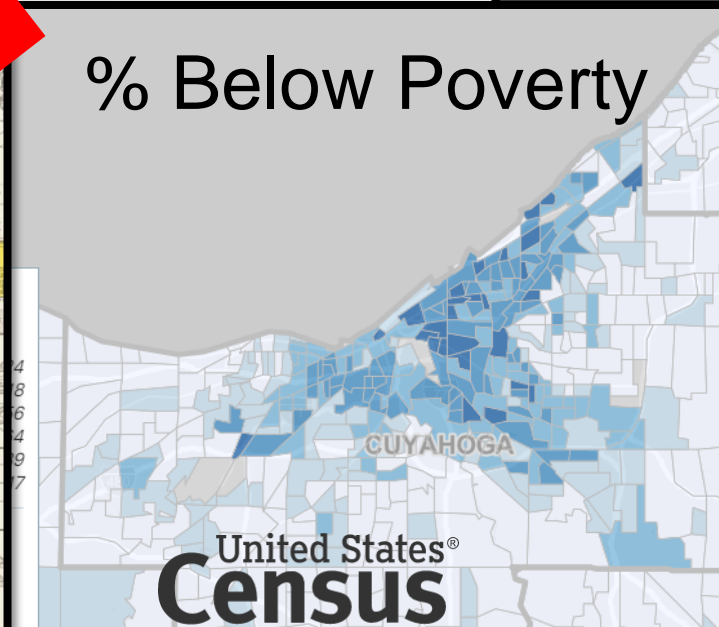
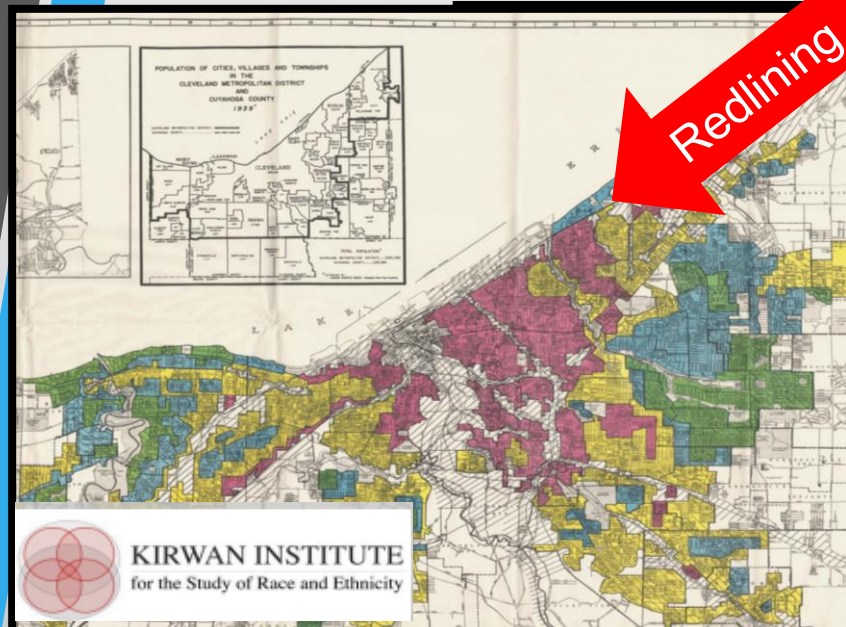


<https://kirwaninstitute.osu.edu/in-the-news/house-1930s-maps-give-insight-practice-redlining>





# ...paying negative compound interest





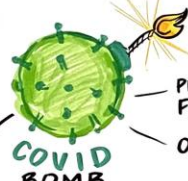
# CREATING AN EQUITABLE AND INCLUSIVE DIGITAL HEALTH STRATEGY

with...

AUTUMN GLOVER  
COURTNEY LYLES  
NWANDO OLAYIWOLA  
MEREDITH SEELEY  
AMY SHEON

CLEVELAND  
WORST CONNECTED  
CITY IN THE  
COUNTRY ...

**SPARKED  
DIGITAL  
INCLUSION  
COMMUNITY**



PEOPLE WORKING  
FROM HOME  
ONLINE SCHOOL

DIGITAL REDLINING

MULTILEVEL and  
MULT FACTORIAL

**ONLINE ACCESS  
IS THE SUPER  
DETERMINANT OF HEALTH**

KEEP ASKING

**WHO**

WHO IS  
INCLUDED?  
WHO IS NOT?

**YOU  
NEED  
ALL 3**

- AFFORDABILITY
- DEVICES
- SKILLS

HOSPITALS/HEALTH  
SYSTEMS WERE SLOW  
TO GET ONBOARD... but

**QUALITY CARE &  
PATIENT SATISFACTION  
RELY ON DIGITAL**

**YOU DON'T NEED  
TO BE AN EXPERT  
JUST GET STARTED**



**OVERCOMING  
PATIENT  
DISTRUST**

SHOW  
THEM  
OVER  
AND  
OVER

**NOW IS  
THE TIME**

SHOW  
THEM  
THE  
VALUE



PILOTS  
WORK

**NATIONAL  
DIGITAL  
INCLUSIVE  
ASSOCIATION**

THERE ARE  
ALREADY PEOPLE  
DOING THIS WORK



**BARRIERS TO  
TECHNOLOGY**

YOUR  
HELP DESK  
IS A WEALTH  
OF KNOWLEDGE



ARE THEY  
CONNECTED  
AND  
COMFORTABLE  
FOR YOUR  
SUB-POPULATIONS

**GEO-SPATIAL  
PATTERNS**



THE WHEEL  
IS INVENTED  
USE RESOURCES  
THAT EXIST

\* NORTH  
STAR  
DEVELOPED  
TELEHEALTH  
CURRICULUM



**DIGITAL  
NAVIGATORS**  
IN LIBRARIES  
IN NEIGHBORHOODS

COMMUNITY  
SPACES

**DATA**

HELPS IDENTIFY  
WHO CAN BENEFIT



**FIXED BROADBAND  
CONNECTION AT  
HOME**



# **healthequityconf**

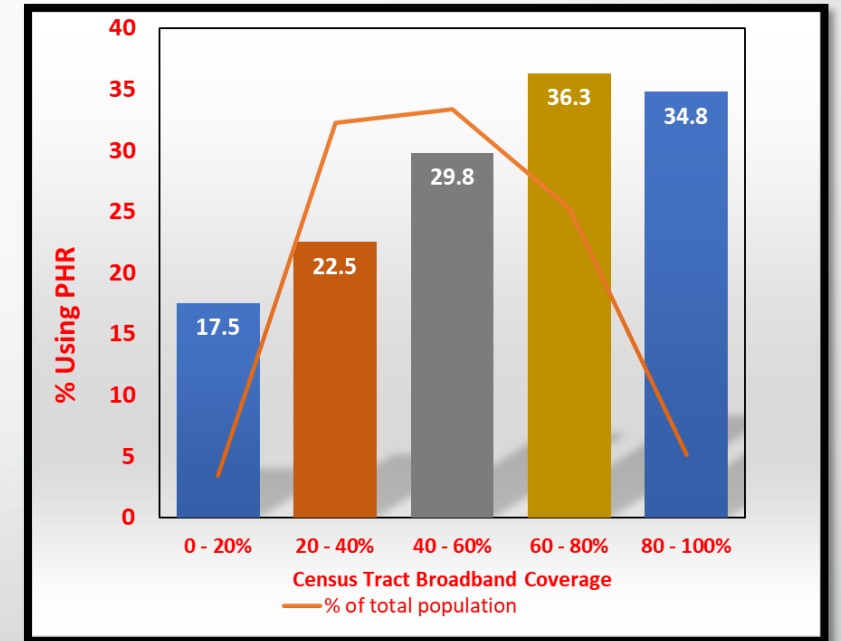


Ohio Experts

Digital Inclusion Perspectives

# Digital Inclusion Opportunities from ACA-era Health IT Investments

- Financial incentives for EHR adoption
- Require ability to aggregate data for public health
- “Meaningful use”



Perzynski, et al 2017



N=243,248

# Rapid Access to Telehealth Disparities Data



**140,184** patients accessing care from March 19 – April 30, 2020. Controlling for individual and community-level attributes, Black patients had 0.6 times the adjusted odds (95% CI: 0.58–0.63) of accessing care through telemedicine compared to white patients...



# SDOH is a top US Health Priority



Vision: Society in which all people can achieve their full potential for health and well-being across the lifespan.

Goal: Healthy physical, social, and economic environments strengthen the potential to achieve health and well-being.

## HEALTH AFFAIRS FOREFRONT

### RELATED TOPICS:

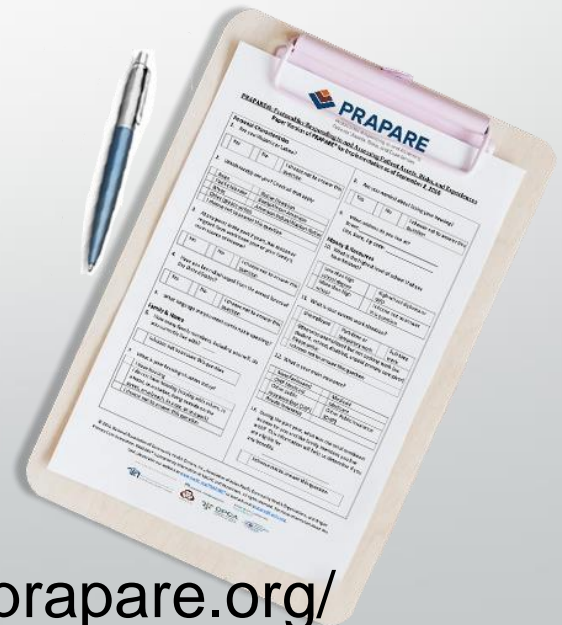
ACCOUNTABLE CARE ORGANIZATIONS | MEDICARE SAVINGS PROGRAMS | SYSTEMS OF CARE | MEDICAID | FOOD  
| QUALITY IMPROVEMENT | PATIENT TESTING | MEDICARE ADVANTAGE | HOUSING | HOSPITAL QUALITY

## Lessons From Five Years Of The CMS Accountable Health Communities Model

[Kate Abowd Johnson](#), [Natalia Barolin](#), [Christine Ogbue](#), [Katherine Verlander](#)

AUGUST 8, 2022

10.1377/forefront.20220805.764159



<https://prapare.org/>

# Refer to community organizations for social needs

- Identify local digital inclusion organizations
- Connect with existing SDOH referral platform



Funding Partners



Ohio



Live in:  
Ashland, Ashtabula, Cuyahoga, Erie,  
Geauga, Huron, Lake, Lorain,  
Medina, Portage, Stark, Summit,  
Wayne, Delaware, Fairfield and  
Franklin Counties.

# Toolkit Available for INCLUSIVE Digital Health

- Identify community resources for addressing social needs
- Create partnerships with those organizations



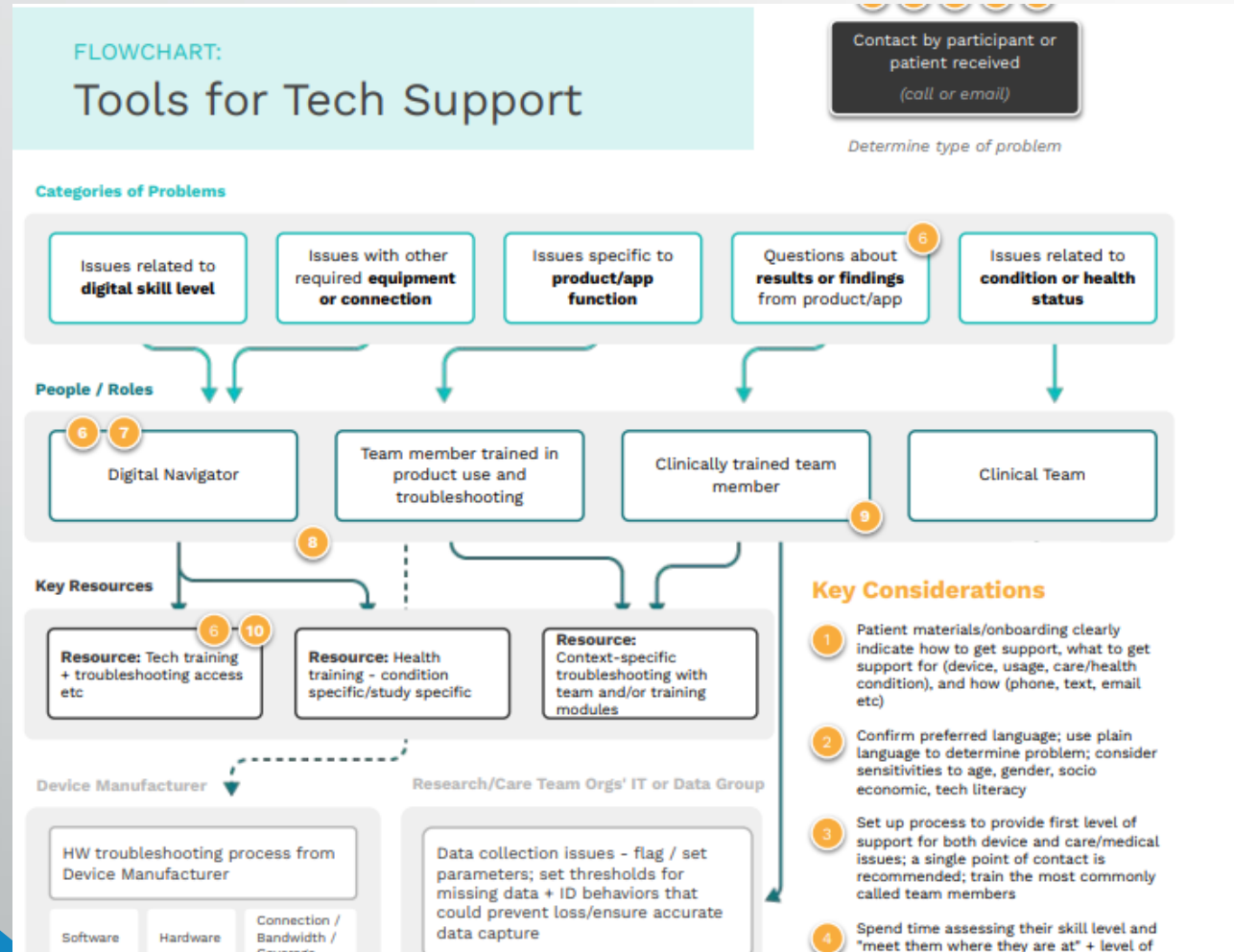
## DATAcc Toolkit for Inclusive Deployment

This toolkit is designed for teams in charge of deployment digital health measurement product deployment to people, patients and communities.

It contains easy-to-use workbooks, guides, worksheets and resources to increase trust and transparency and ultimately give access to health information for greater control over health and to live healthier lives.

<https://datacc.dimesociety.org/>

# Train Telehealth/Portal Tech Support to Address Basic Digital Needs



## Tech Support Workflow

# Public Health: MISSING FROM NOFO!

- Community health needs assessments
- Health improvement plans
- Health Outcomes



<https://odh.ohio.gov/static/SHIP/2020-2022/2020-2022-SHIP.pdf>

## Priority factors\*

- 1 Community conditions**
  - Housing affordability and quality
  - Poverty
  - K-12 student success
  - Adverse childhood experiences
- 2 Health behaviors**
  - Tobacco/nicotine use
  - Nutrition
  - Physical activity
- 3 Access to care**
  - Health insurance coverage
  - Local access to healthcare providers
  - Unmet need for mental health care

\* These factors are sometimes referred to as the

## Priority health outcomes

- 1 Mental health and addiction**
  - Depression
  - Suicide
  - Youth drug use
  - Drug overdose deaths
- 2 Chronic disease**
  - Heart disease
  - Diabetes
  - Childhood conditions (asthma, lead)
- 3 Maternal and infant health**
  - Preterm births
  - Infant mortality
  - Maternal morbidity



# Use Public Health Data Sources



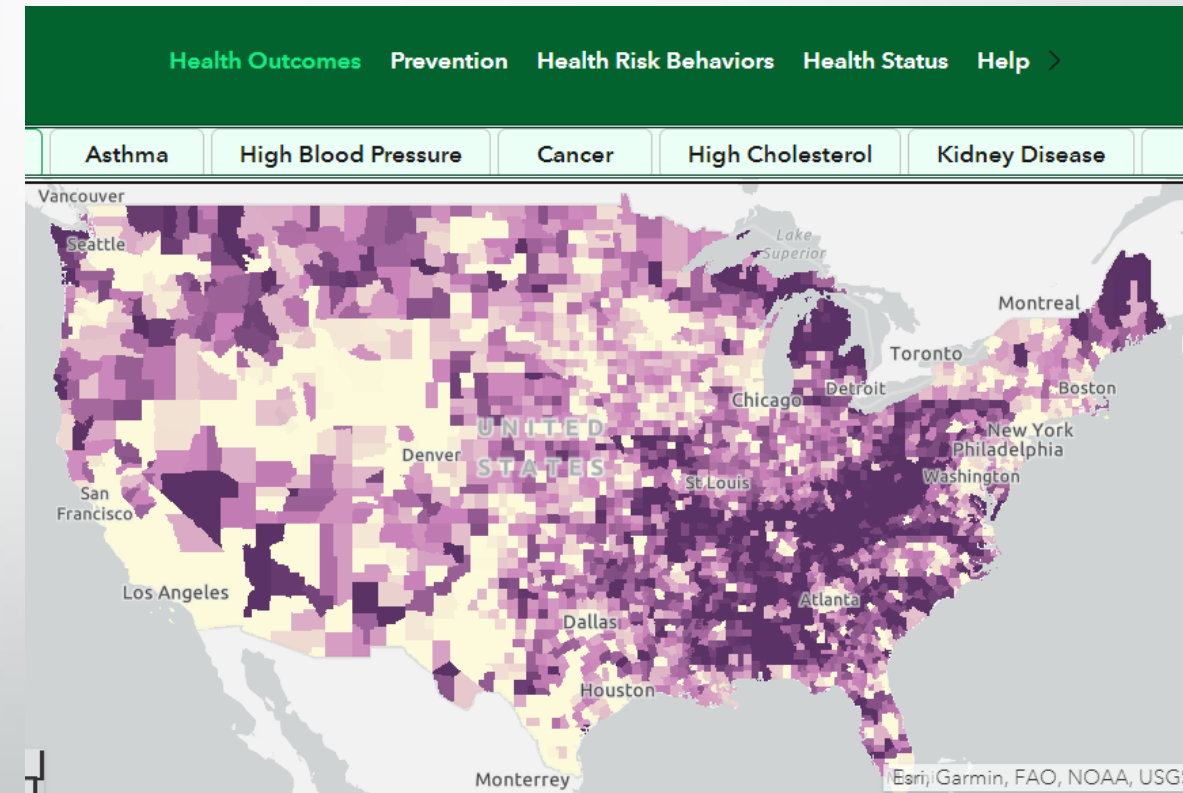
CDC Behavioral Risk Factor  
Surveillance System

&

Youth Risk Behavior  
Surveillance System

<https://www.cdc.gov/brfss>

[https://www.cdc.gov/healthyyouth/  
data/yrbs/](https://www.cdc.gov/healthyyouth/data/yrbs/)



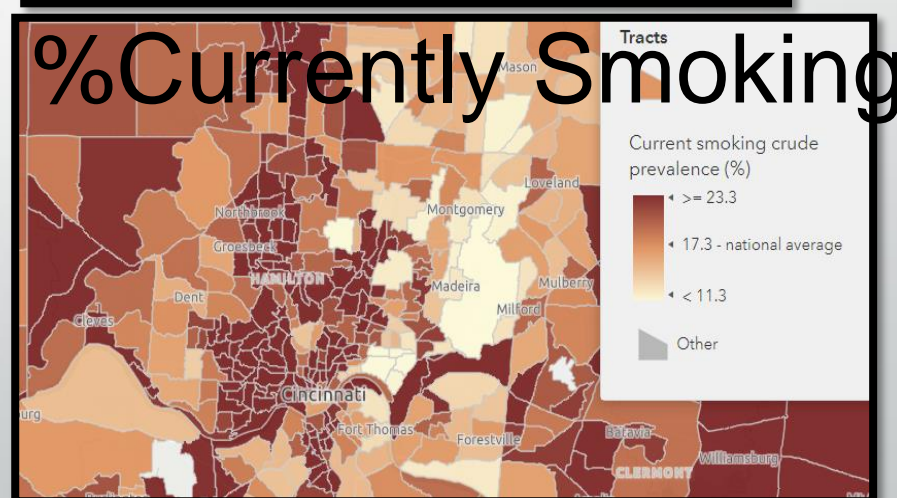
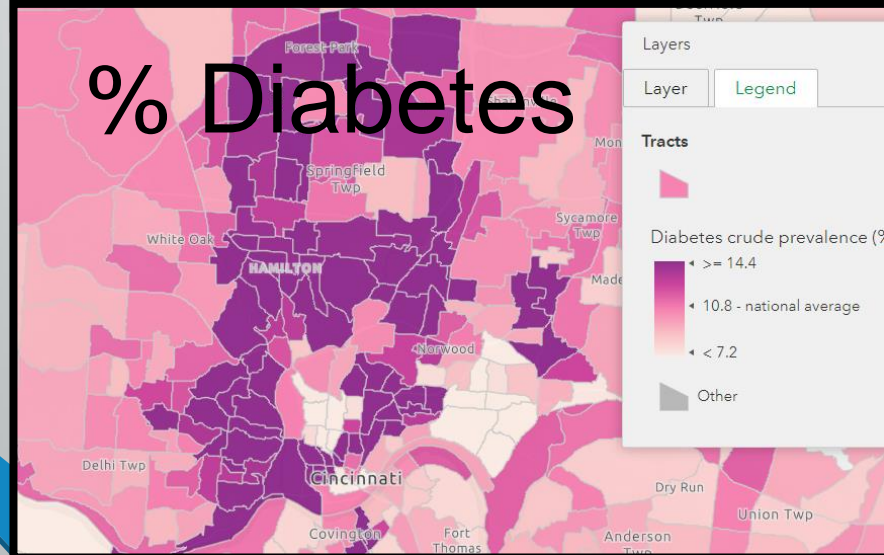
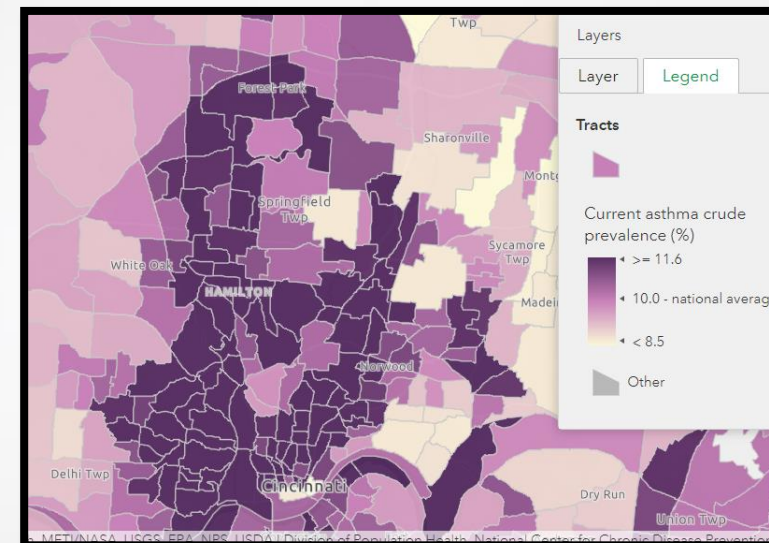
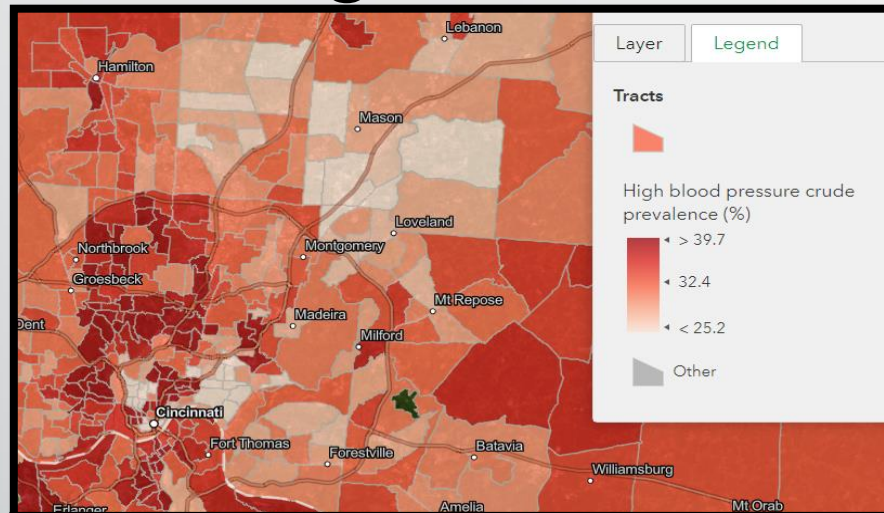
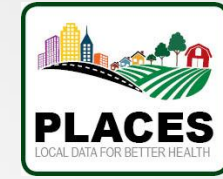
<https://www.cdc.gov/places>



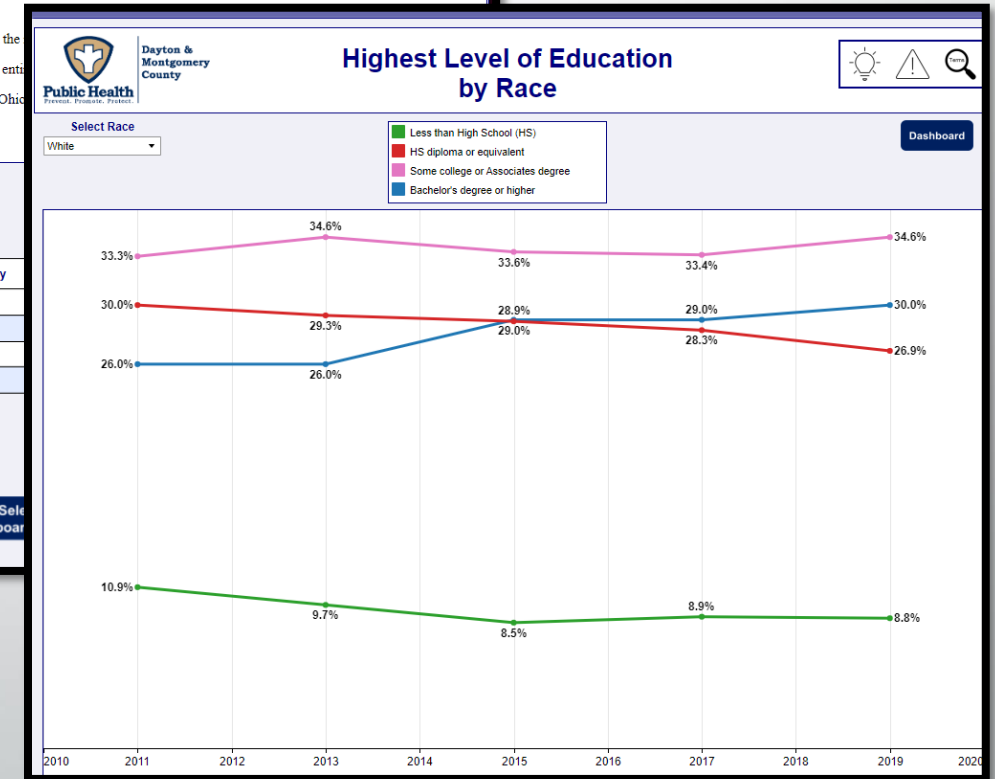
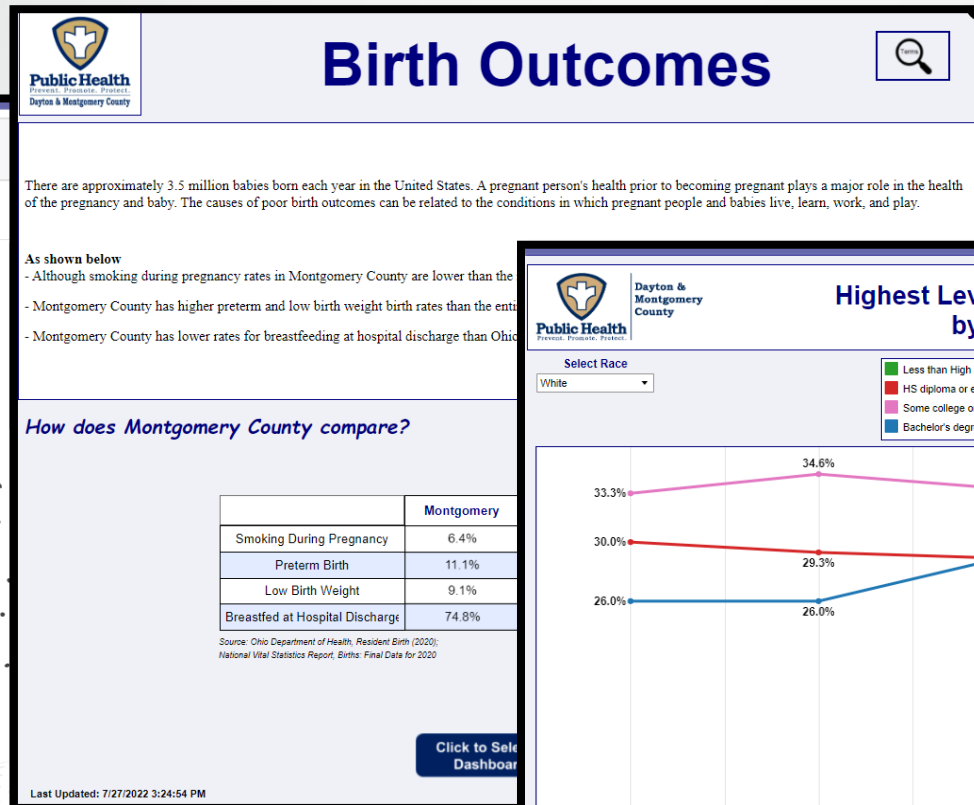
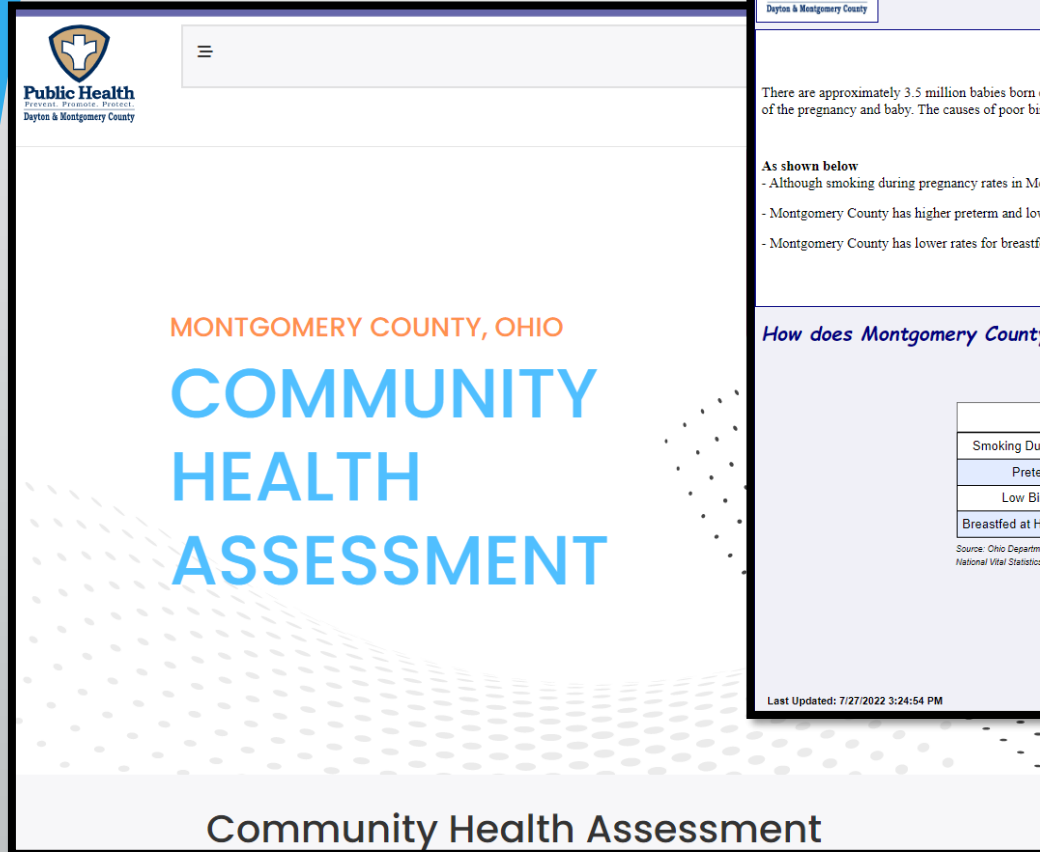
# Hamilton County Area

## % High BP

## % Asthma



# Data Platforms for KPI Reporting



<https://www.cha.phdmc.org/>

# Advocate to Include Digital Equity Data

The screenshot shows the Healthy Northeast Ohio website. The header includes the logo and the tagline "Sharing Knowledge to Create Healthier Communities". A navigation bar contains links for "Explore Data", "Explore By County", "Tools & Resources", and "Learn More". A red arrow points to the "Explore Data" link. A dropdown menu for "Explore Data" is open, showing options: "Search for Data & Curated Dashboards", "Indicator List by Location", "Specialty Dashboards", "SocioNeeds Index® Suite", "Build a Custom Dashboard", and "Build a Custom Report". The main content area features several data exploration cards: "Adverse Childhood Experiences (ACEs)", "Early Childhood Health & Well-Being", "2019 Cuyahoga County CHNA", "Digital Access Indicators", "Social Determinants of Health", and "COVID-19 Indicators". Blue starburst callouts are drawn around the "Digital Access Indicators", "2019 Cuyahoga County CHNA", and "Social Determinants of Health" cards.

**HEALTHY NORTHEAST OHIO**  
Sharing Knowledge to Create Healthier Communities

HP2030  
HEALTHY PEOPLE 2030  
CHAMPION

Explore Data ▾ Explore By County ▾ Tools & Resources ▾ Learn More ▾

**Explore Data ▾**

- Search for Data & Curated Dashboards
- Indicator List by Location
- Specialty Dashboards ▶
- SocioNeeds Index® Suite ▶
- Build a Custom Dashboard
- Build a Custom Report

**Adverse Childhood Experiences (ACEs)**  
View ACEs related indicators

**Early Childhood Health & Well-Being**  
Explore local data from Better Health Partnership and Ohio Healthy Programs

**2019 Cuyahoga County CHNA**  
Select indicators from the 2019 Cuyahoga County CHNA

**Digital Access Indicators**  
Indicators related to digital access

**Social Determinants of Health**  
View indicators related to health care access, education, income, housing, transportation and public safety.

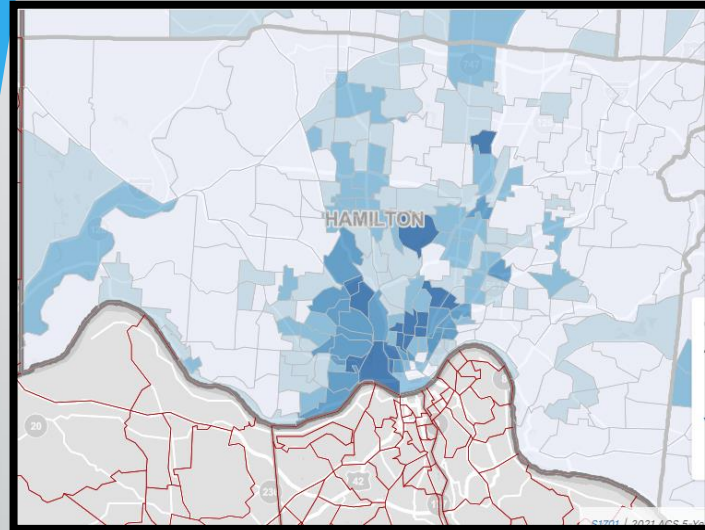
**COVID-19 Indicators**  
Indicators related to COVID-19

Needs segregation and historic redlining data!

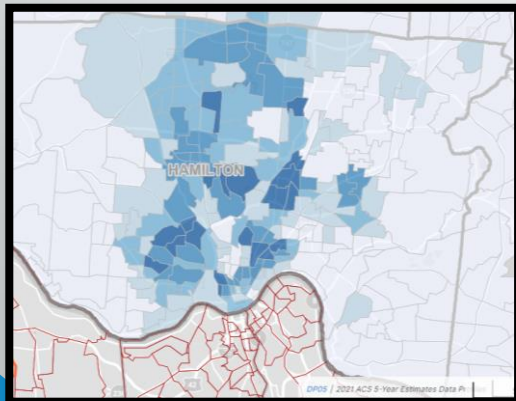


# Cincinnati:

% low Income



ACS 2021 5-Year Table S1701



% No Internet

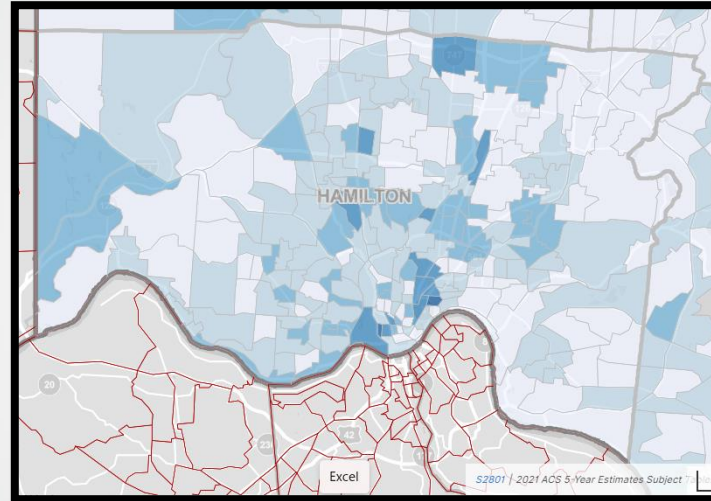
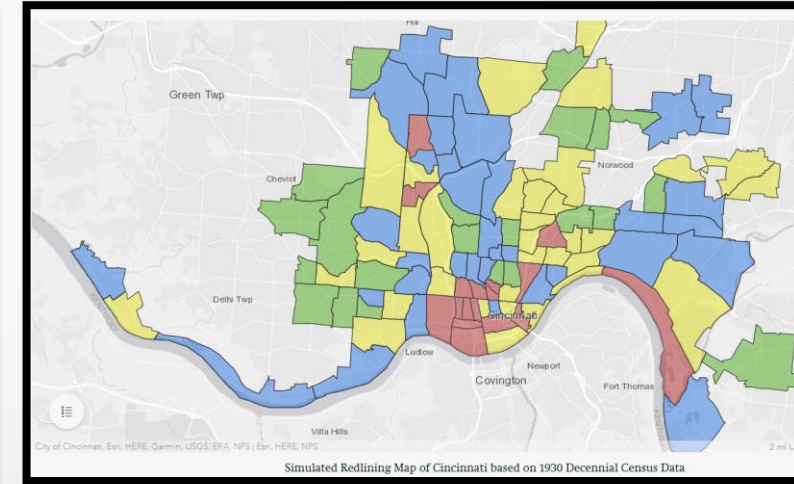


Table S2801

% Black, Table DP05

United States<sup>®</sup>  
**Census**  
Bureau

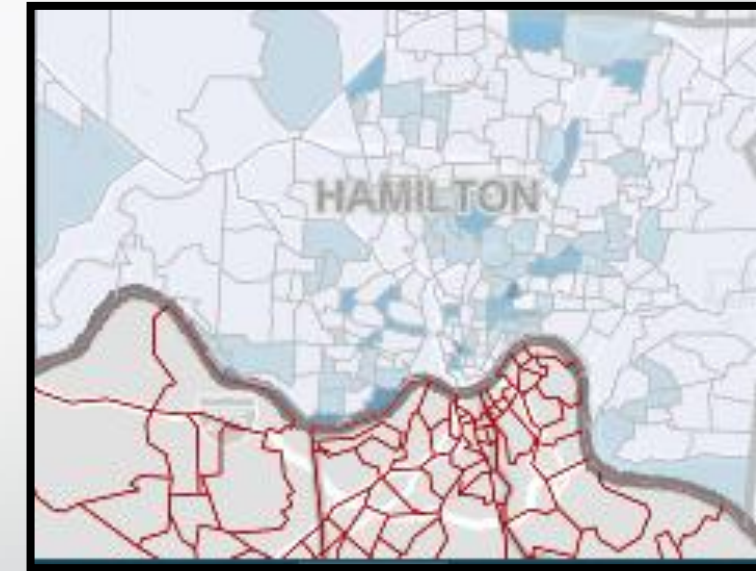
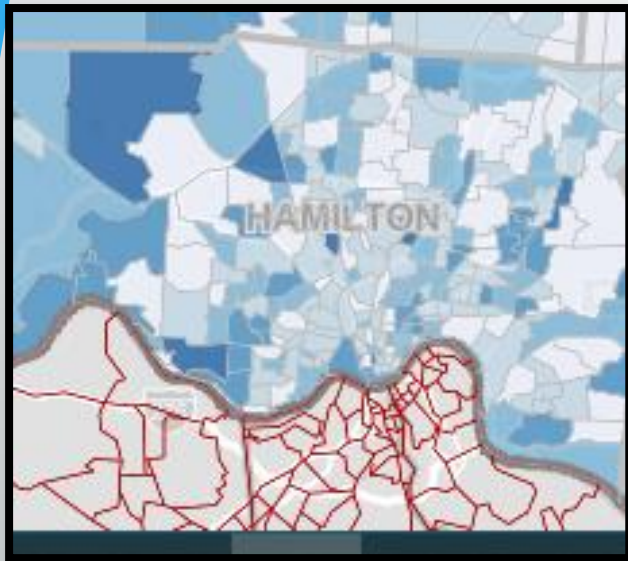
Redlining Map



<https://storymaps.arcgis.com/stories/d76e295c27bc45deba50273ac9fc06fd>

# Cincinnati: % No Internet and

Low Income      Medium Income      High Income



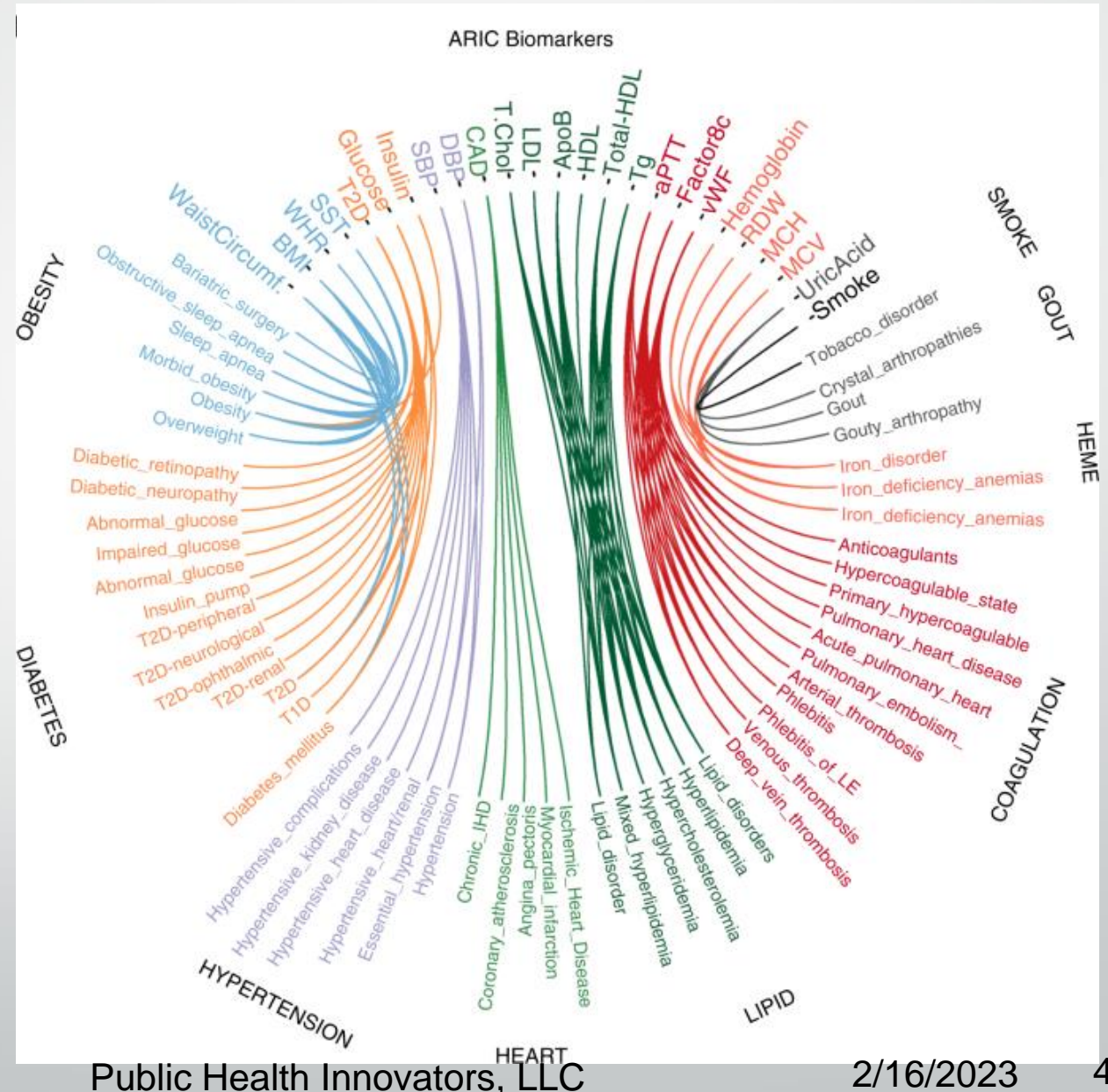
ACS 2021 5-Year Data, Table S2801





# Measuring Health Outcomes from EHR Data

Mosley, J.D., *et al.* Prospective epidemiologic cohorts and electronic health records to identify disease biomarkers. *Nat Commun* **9**, 3522 (2018). <https://doi.org/10.1038/s41467-018-05624-4>



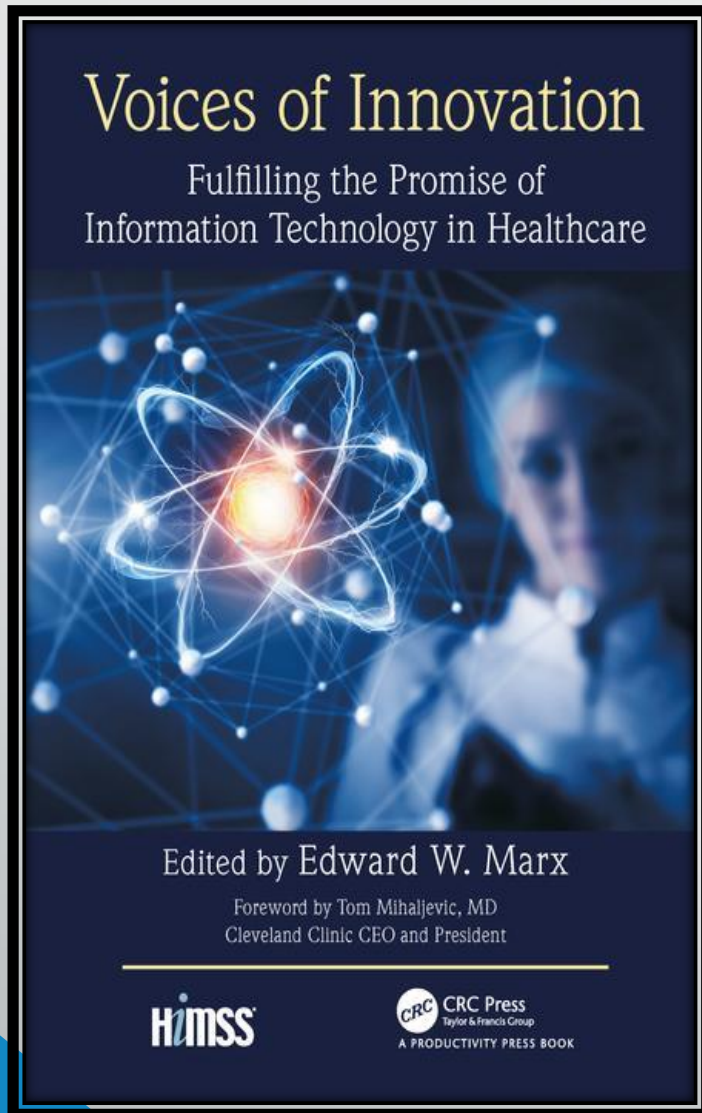


# Tips on Picking a Health Outcome

Health Outcomes	Prevention	Health Risk Behavior	Health Status
Arthritis Asthma High BP Cancer High Cholesterol Kidney Disease COPD Heart Disease Diabetes Depression Obesity Stroke All Teeth Lost	Health insurance Annual Checkup Dental visits BP Medication Cholesterol Screening Mammography Cervical Ca Scrng Preventive services (men and women)	Binge drinking Current smoking Physical inactivity Sleep <7 hrs	General health Physical health Mental Health
<div> <ul style="list-style-type: none"> <li>• Prevalence</li> <li>• Variation; equity, geographic distrib</li> <li>• Strength of association with BB</li> <li>• Timeframe to make an impact</li> <li>• Capacity to intervene</li> <li>• Intervention dose, duration, delivery</li> <li>• Attribution</li> <li>• Data</li> </ul> </div>			

RE-AIM Framework: Glasgow et al  
[https://www.cdc.gov/pcd/issues/2018/17\\_0271.htm](https://www.cdc.gov/pcd/issues/2018/17_0271.htm)

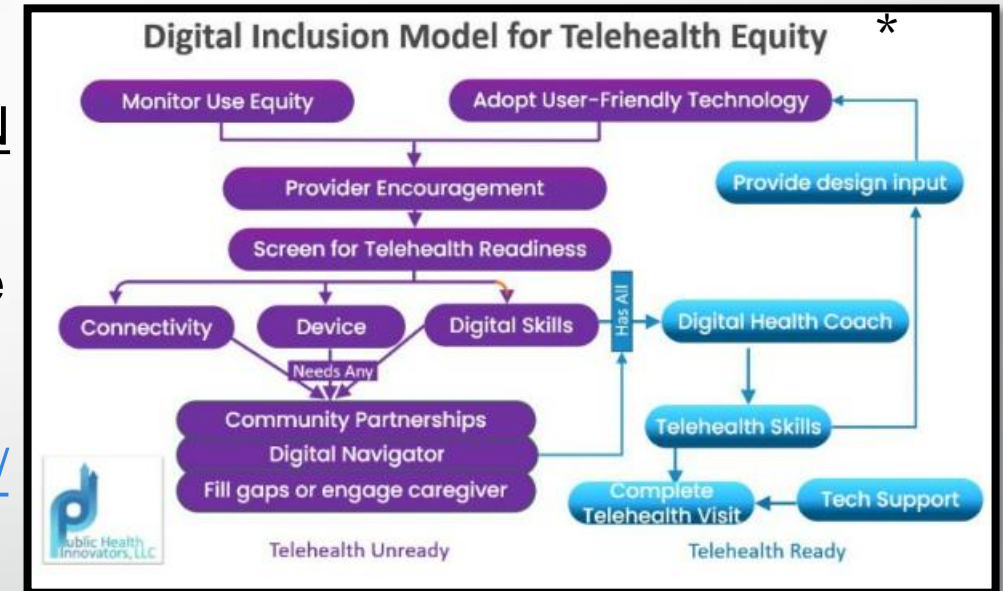
# Train CHWs as Digital Navigators and Digital Health Coaches; Develop state certification for DHNs



How can health systems leverage  
technology to engage patients?  
Sheon AR, Carroll L. 2019

# Digital (Health) Navigation with Health Care

- Sheon: model-developed as NDIA Senior Fellow
- DHN screens and refers to community-based DN for connectivity and basic skill training
- DHN provides coaching for digital health tool use
- [DigitalHealthNavigators.com](https://www.digitalhealthnavigators.com)
- <https://www.publichealthinnovators.com/2021/09/what-is-telehealth-readiness-and-how-to-make-it-happen/>
- National Digital Inclusion Alliance to begin discussing

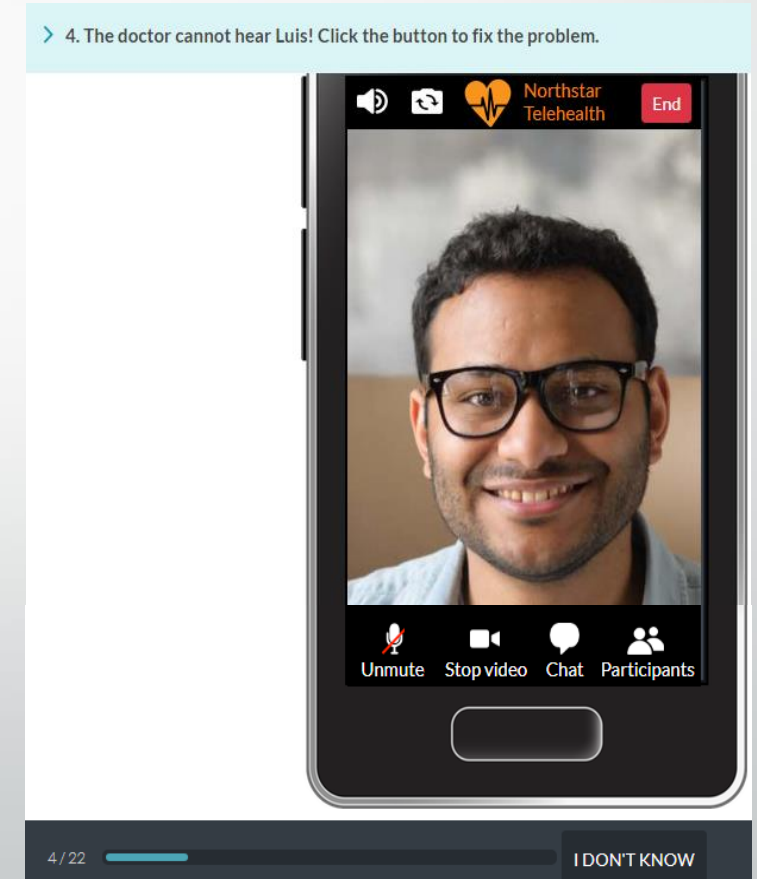
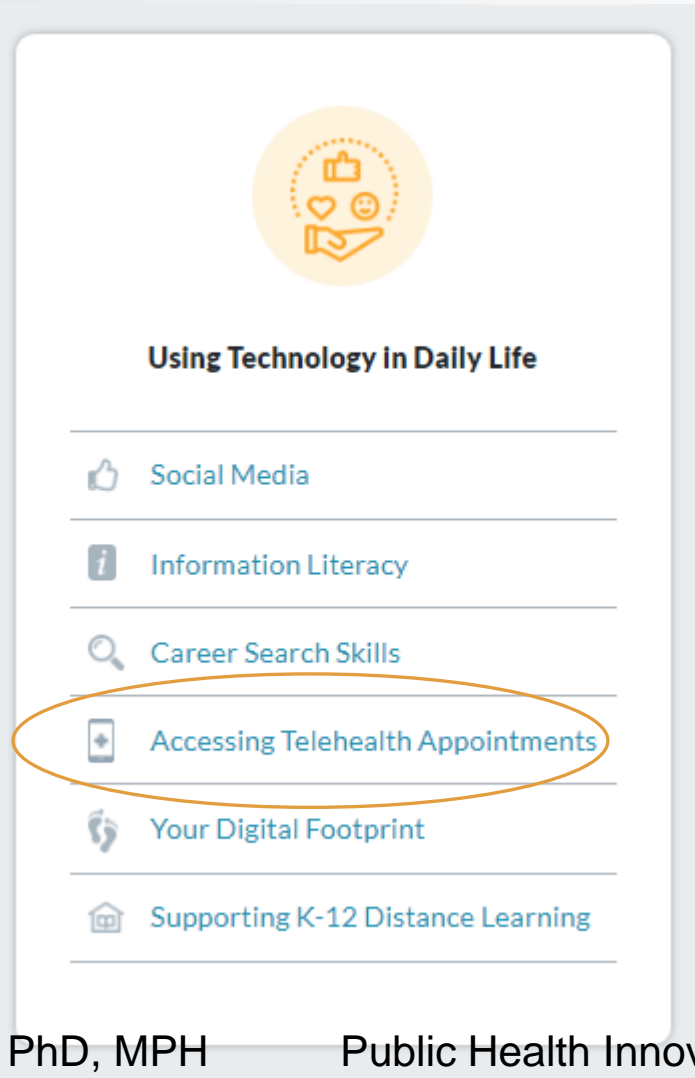


\*Figure used with permission from Public Health Innovators, LLC

# Improve Digital Literacy by Incorporating Digital Skill Assessments and Training into Patient Portal



Interactive digital literacy tests, taken online



# Digital (Health) Navigation in Health Care

- Performs all DN duties AND
- Provides coaching for digital health tool use
- Advocated by:

Wisniewski H, et al. The Role of Digital Navigators in Promoting Clinical Care and Technology Integration into Practice. Digit Biomark. 2020.

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7768140/>

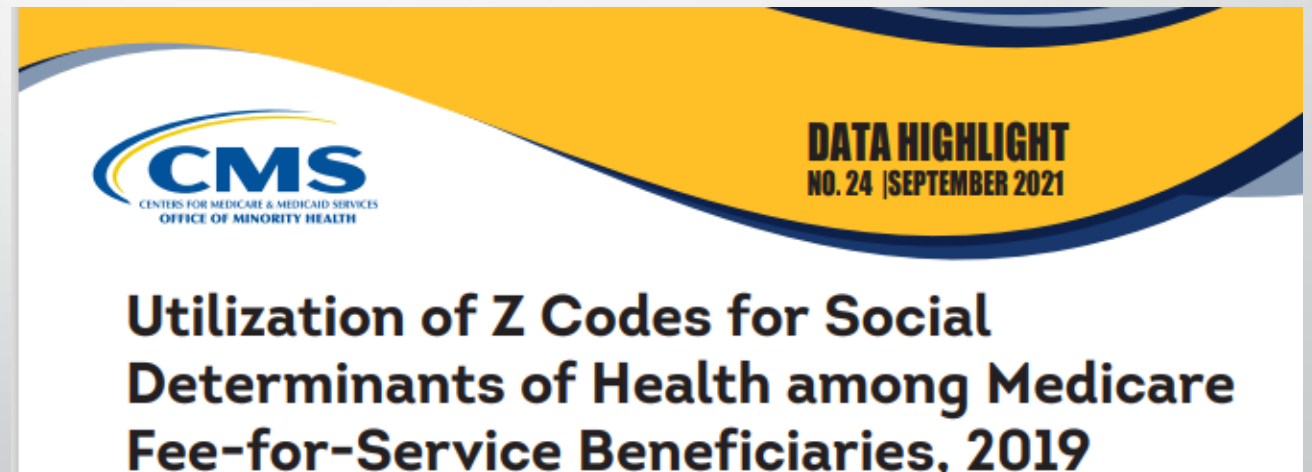
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# Advocate for insurance reimbursement for digital readiness needs as part of SDOH

- Coding digital readiness gaps as SDOH
- Reimbursement for time to help patient set up remote monitoring and reviewing patient-submitted health data
- Direct provision of devices and payment for connectivity





# Teach Digital Health Skills in Community-Based Digital Skill Training Settings

**GREATER CLEVELAND DIGITAL HELP CENTER**

## THE BRIDGE TO OPPORTUNITY IS DIGITAL

As the world moves online, what used to be a quick walk or bus ride away no longer happens over high speed internet. Leaving many disconnected from the things they need. This site offers access to the online world. To connect with jobs, doctors, schools, and resources that help people and communities thrive.

**Scroll down to get affordable internet service, free training and support, discounted devices, and more.**

To connect to a digital navigator, call 216-307-6990

**Public Computer Access   Computer Classes**

## Northstar Digital Literacy Assessment

**Learn it, know it, show it.**

Northstar Digital Literacy tests your computer skills. You can build skills in key areas, and demonstrate your knowledge by earning certificates and badges. Prepare for your future now!

Northstar is a program of Literacy Minnesota

INDIVIDUALS	ORGANIZATIONS	
<b>Test Your Digital Literacy</b> Complete any of the online modules to see what you know. <a href="#">TAKE AN ASSESSMENT</a>	<b>Build Your Skills</b> Grow your understanding of digital literacy topics. <a href="#">SEE MORE</a>	<b>Become a Northstar Location</b> Use Northstar tools to increase digital literacy. <a href="#">LEARN MORE</a>

Using Technology in Daily Life

- [Social Media](#)
- [Information Literacy](#)
- [Career Search Skills](#)
- [Accessing Telehealth Appointments](#)
- [Your Digital Footprint](#)
- [Supporting K-12 Distance Learning](#)

Telehealth Appointment Readiness

# Summary: Health Care Opportunities for Digital Inclusion

1. Health care concerns about SDOH & equity align with DI
2. Health care can generate massive, timely data on connectivity, meaningful use, and health outcomes
3. Health care has a mechanism for screening millions of patients & referring to local DI organization; or incorporating digital skill training into existing workflows
4. HC can support community digital health skill training

# SDOH in Health Care: Learn more



NATIONAL ACADEMY OF MEDICINE

## Social Determinants of Health 101 for Health Care: Five Plus Five

By Sanne Magnan

October 9, 2017 | Discussion Paper



<https://nam.edu/social-determinants-of-health-101-for-health-care-five-plus-five/>

# American Health Information Management Association




Understanding the Issues   Programs & Partnerships ▾   Research ▾   News ▲   About Us

Listen   Text Size - +

Health Literacy for Health Equity™ Insights Blog

## Digital Inclusion Informed By the History of Redlining


01/17/2023




**Amy Sheon, PhD, MPH**  
Public Health Innovators, LLC

## How Health Technology Navigators in Los Angeles' Safety Net Bridge the Digital Divide

01/04/2023




**Alejandra Casillas, MD, MSHS**




**Anshu Abhat, MD, MPH**

## Leveraging Healthcare Settings to Link Patients with the Affordable Connectivity Program

11/30/2022



**Alister Martin, MD, MPP**  
CEO, A Healthier Democracy



**Megan Amarbayan, MPP**  
Research Assistant, A Healthier Democracy

<https://ahimafoundation.org/news/health-literacy-for-health-equity-insights-blog/>



# Telehealth Equity Coalition *Blogs*

## Improving Digital Literacy to Improve Telehealth Equity

October 18, 2021 • 6 min read

## Solutions for Connectivity and Hardware Barriers to Telehealth Equity from TEC Members

July 14, 2021 • 7 min read

*tec*

## Telehealth: Bridging the Trust Divide

April 13, 2021 • 9 min read

## Is Telehealth Transforming Care for Everyone?

February 2, 2021 • 9 min read

## Barriers to Telehealth Adoption

February 2, 2021 • 8 min read

*tec* + HEAL

<https://www.telehealthequitycoalition.org/#Blog>





## Consumer Technology for Health and Health Care

📅 December 8, 2021



<https://digitunity.org/community-forums/education/digital-health-technology/>

## How Healthcare Can Support Digital Health Equity

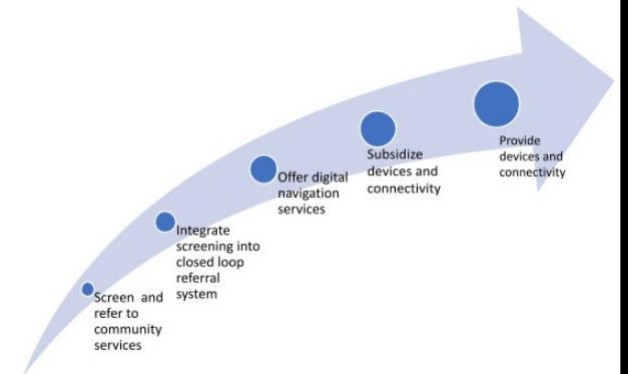
📅 February 28, 2022



<https://digitunity.org/community-forums/how-healthcare-can-support-digital-health-equity/>

## Leveraging Healthcare for Digital Inclusion

📅 March 7, 2022



<https://digitunity.org/community-forums/leveraging-healthcare-for-digital-inclusion/>

# Other Resources

Redlining maps



<https://guides.osu.edu/maps/redlining>

ACS/Census Data



<https://www.census.gov/acs/www/data/data-tables-and-tools/subject-tables/>

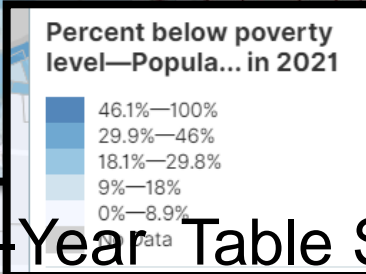
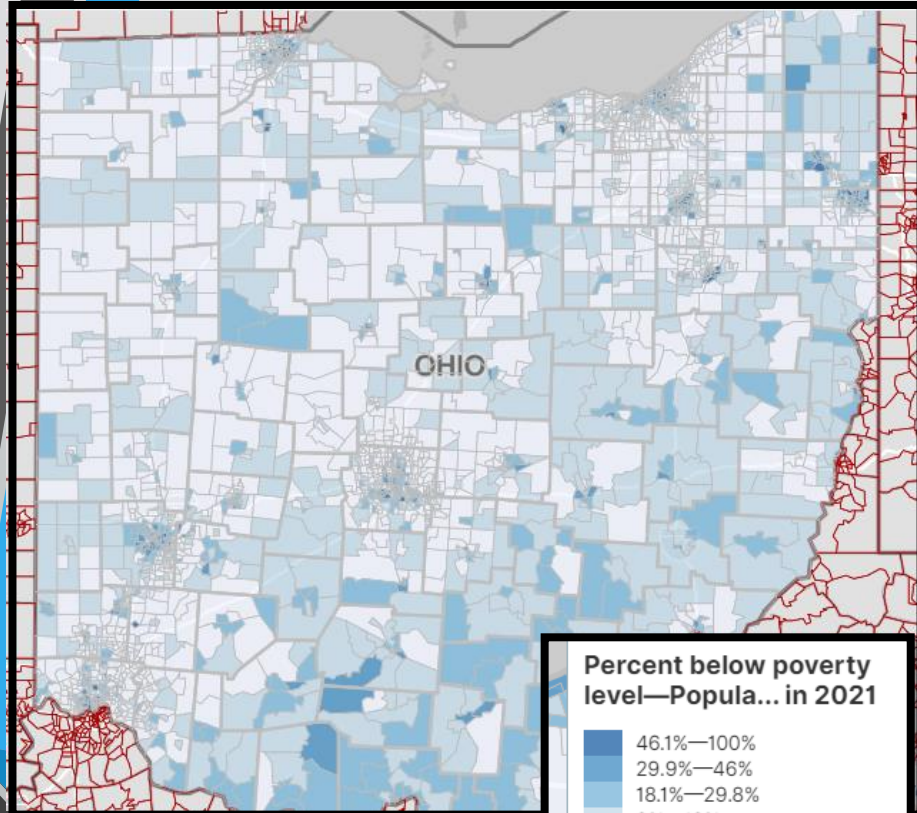
FCC Mapping  
Broadband Health  
<https://www.fcc.gov/health/maps>

CDC Places  
<https://www.cdc.gov/places/index.html>

HealthyNEO.org

Conduent Healthy Communities Platform  
<https://www.conduent.com/claims-and-administration/community-health-solutions/>

# Ohio Census Tracts % Below poverty



ACS 2021 5-Year Table S1701

United States<sup>®</sup>  
**Census**  
Bureau

# % Black

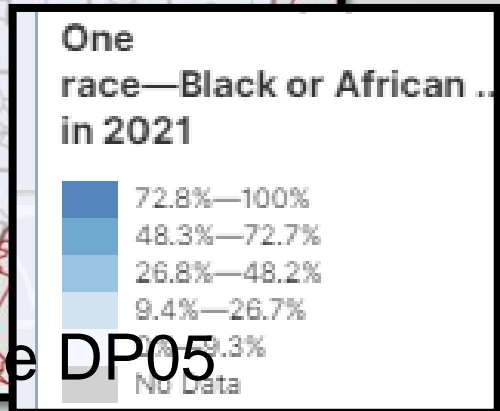
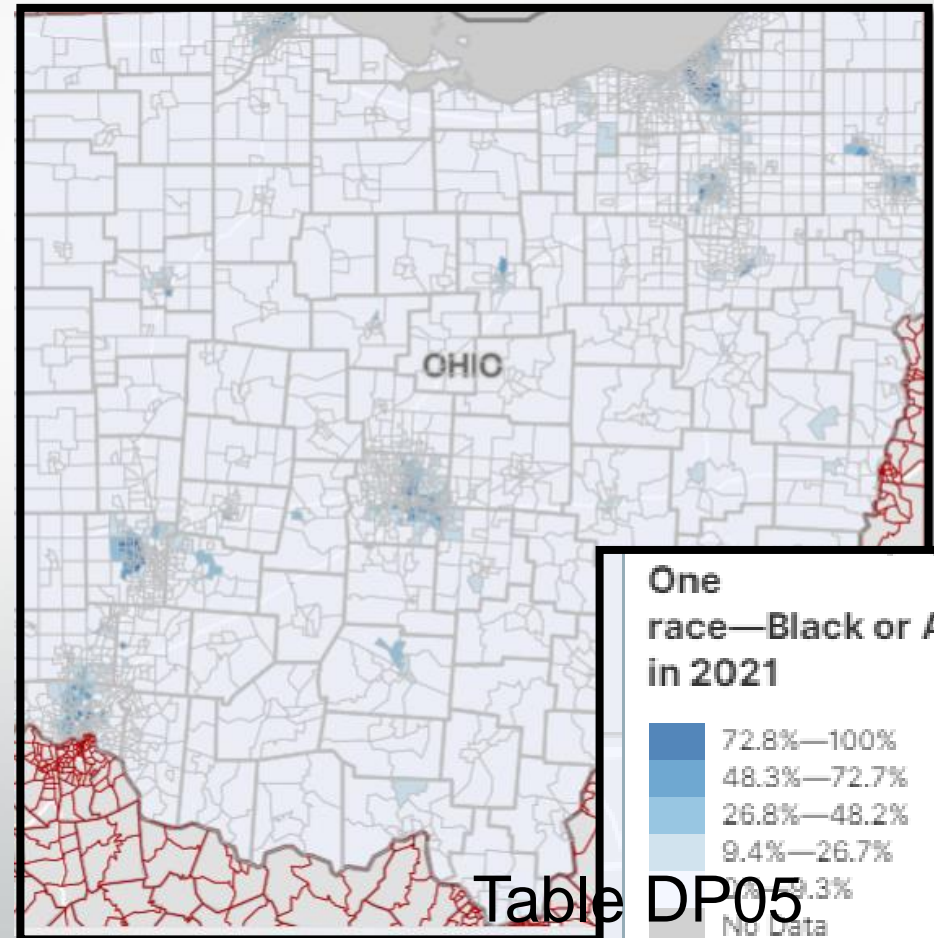
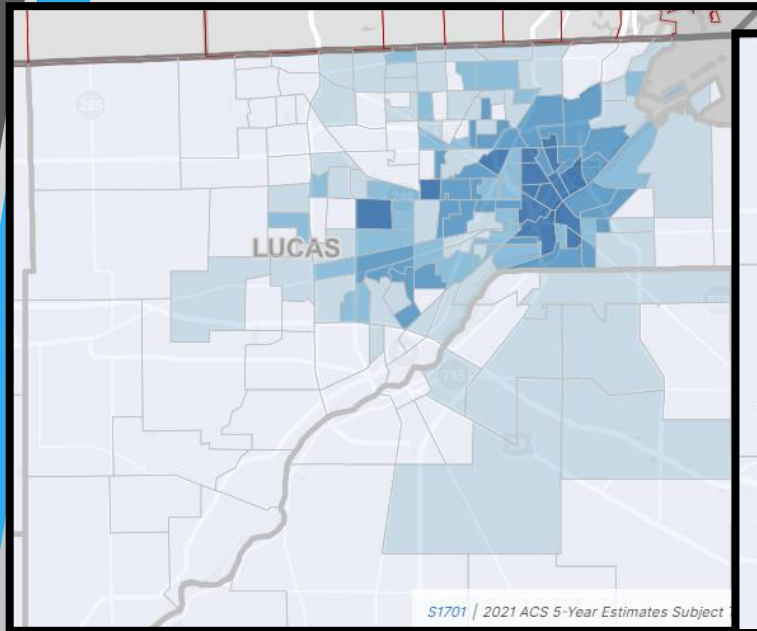


Table DP05



# Lucas County

## % Below poverty    % Black    Toledo Redlining



ACS 2021 5-Year Table S1701

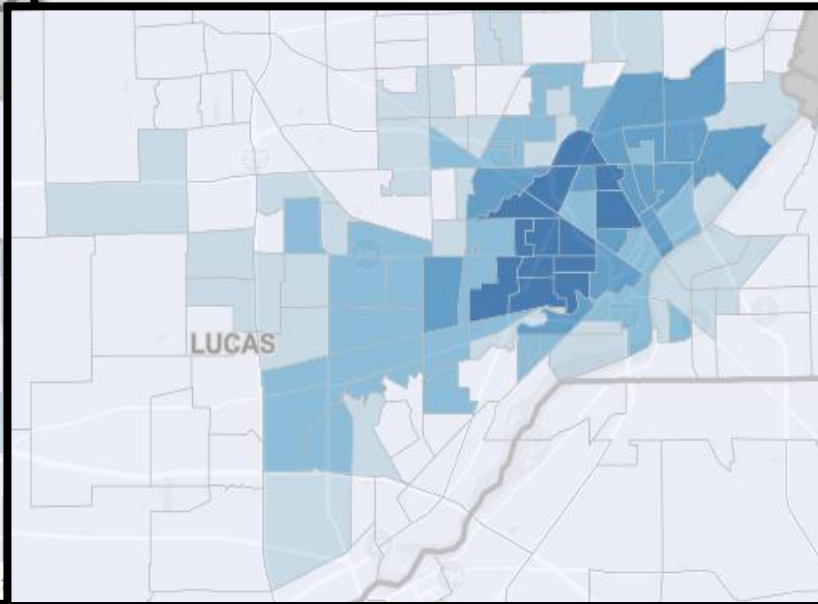
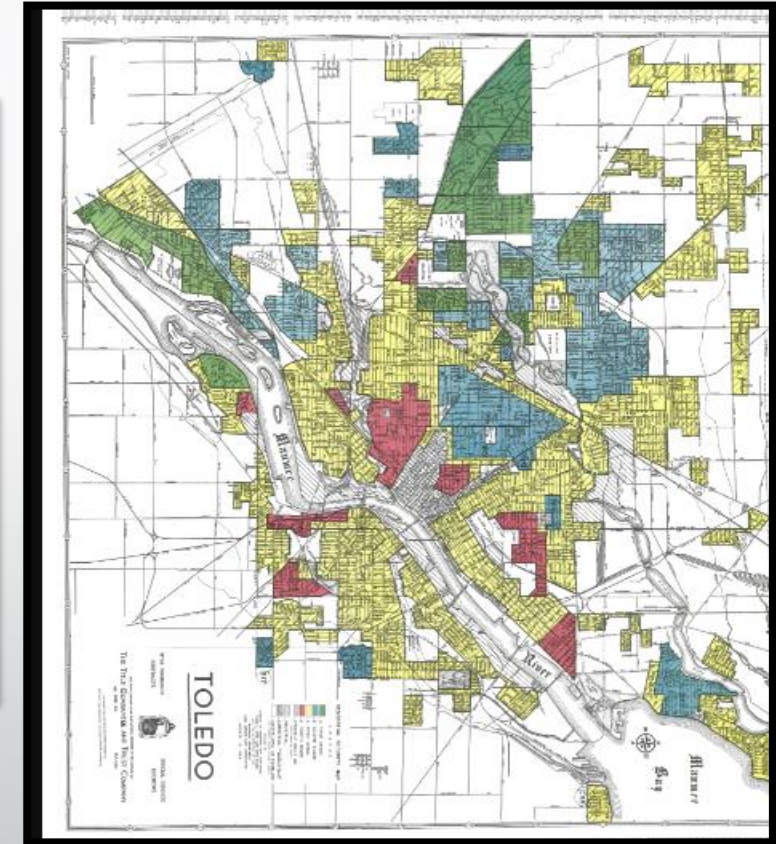


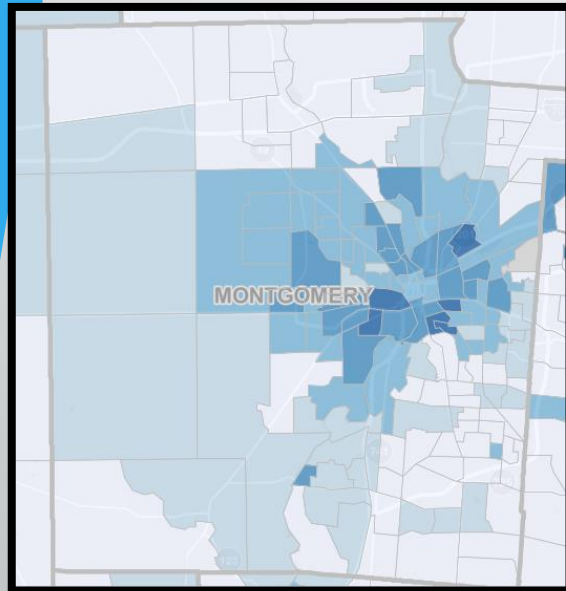
Table DP05



<https://guides.osu.edu/maps/redlining>

# Montgomery County

## % Below Poverty    % Black    Dayton Redlining



ACS 2021 5-Year Table S1701

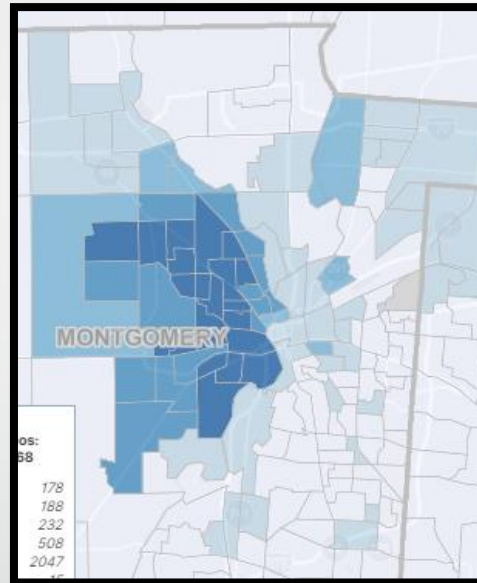
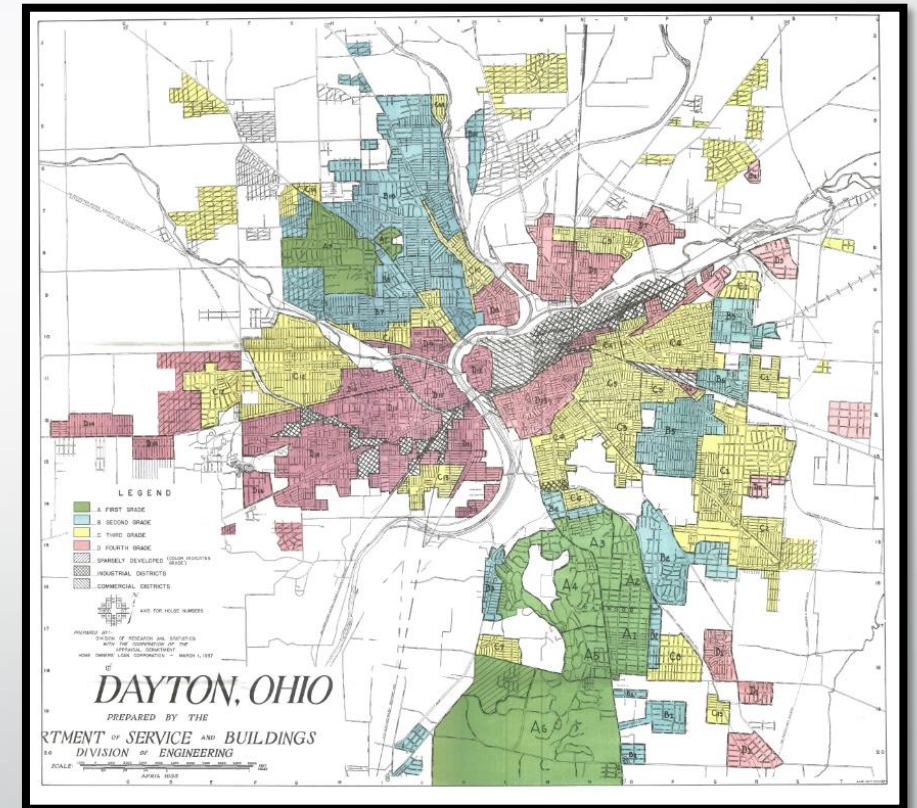


Table DP05

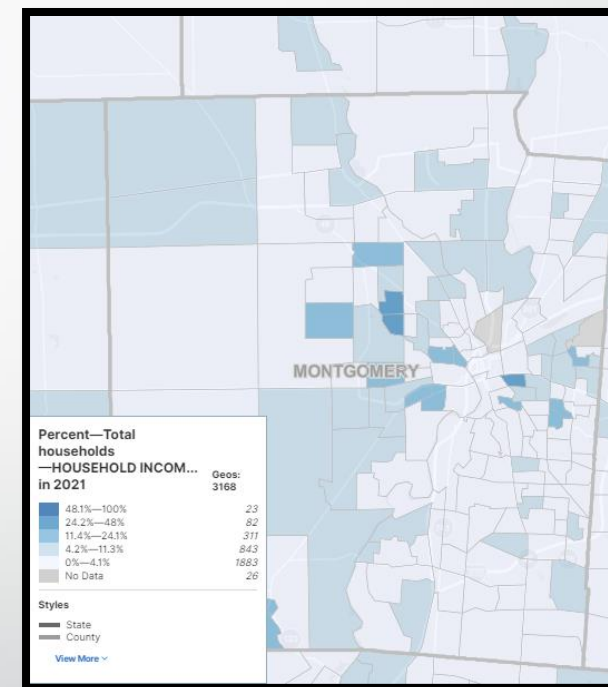
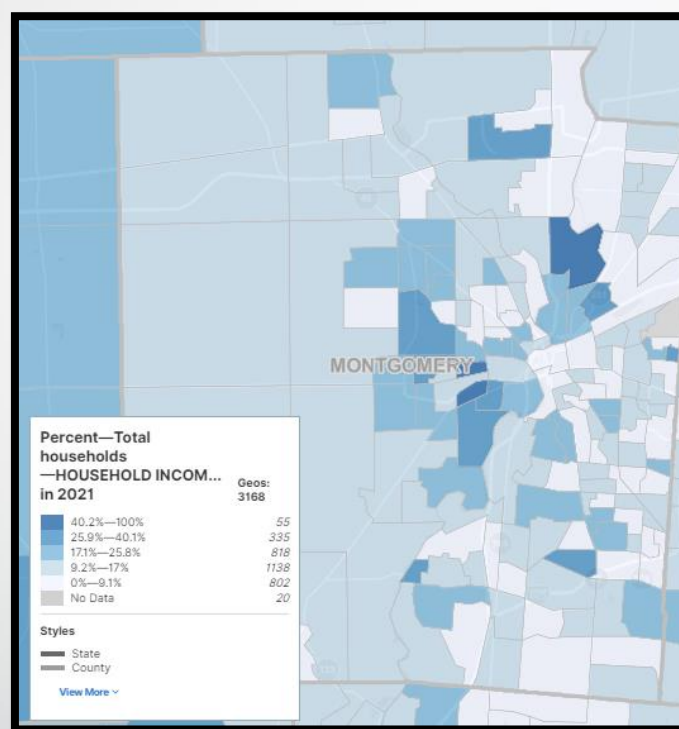
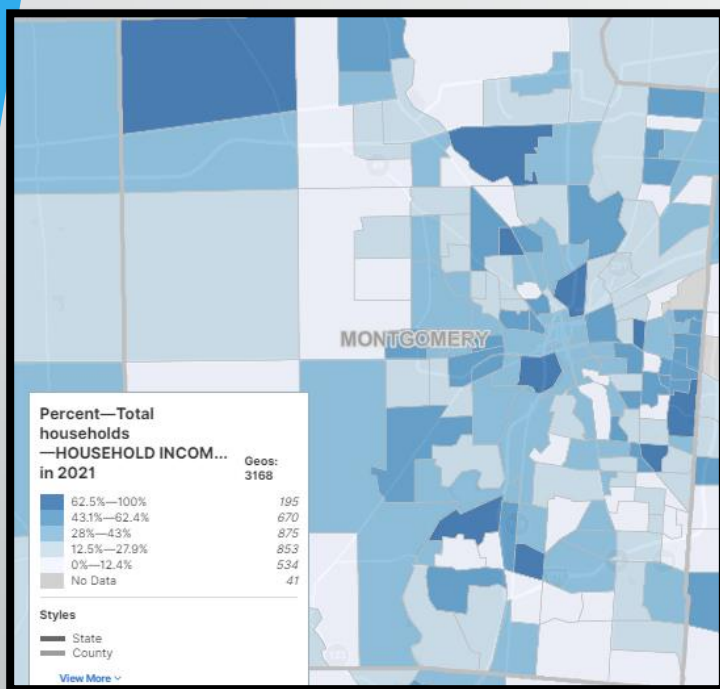


<https://guides.osu.edu/maps/redlining>



# Montgomery County % No Internet

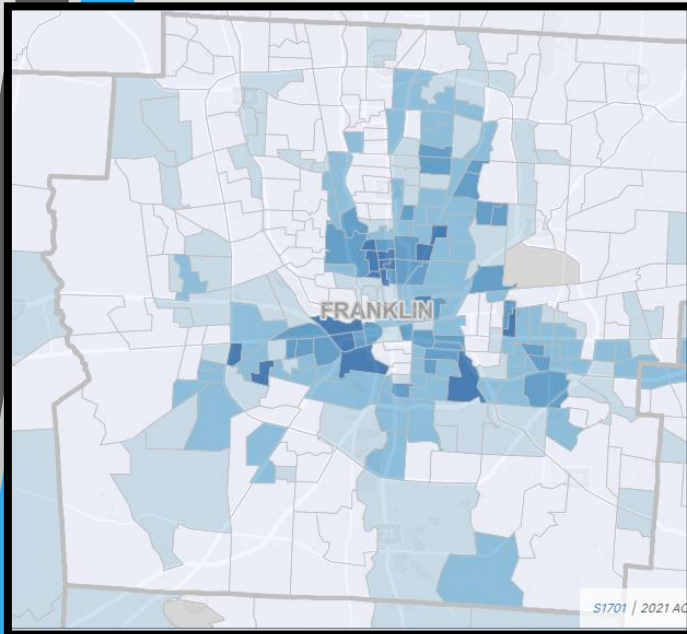
## Low Income      Middle Income      High Income



ACS 2021 5-Year Data, Table S2801



# Franklin County % below poverty      % Black      Columbus Redlining



ACS 2021 5-Year Table S1701

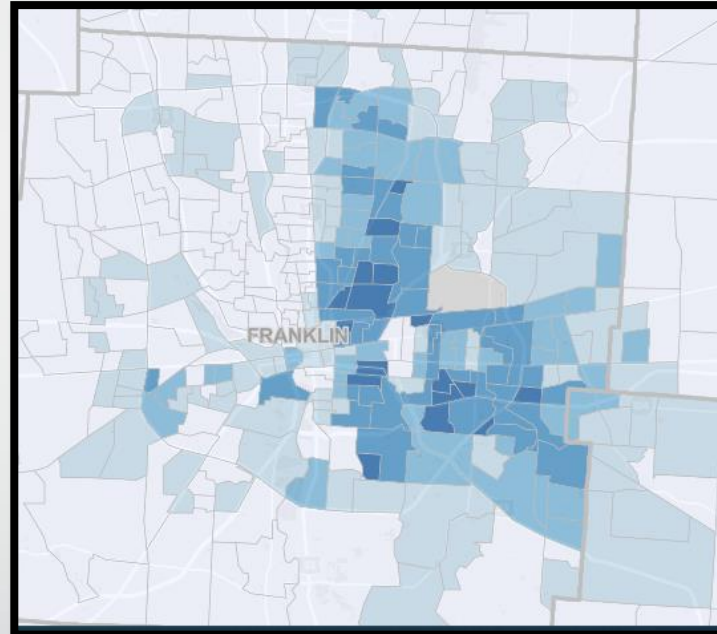
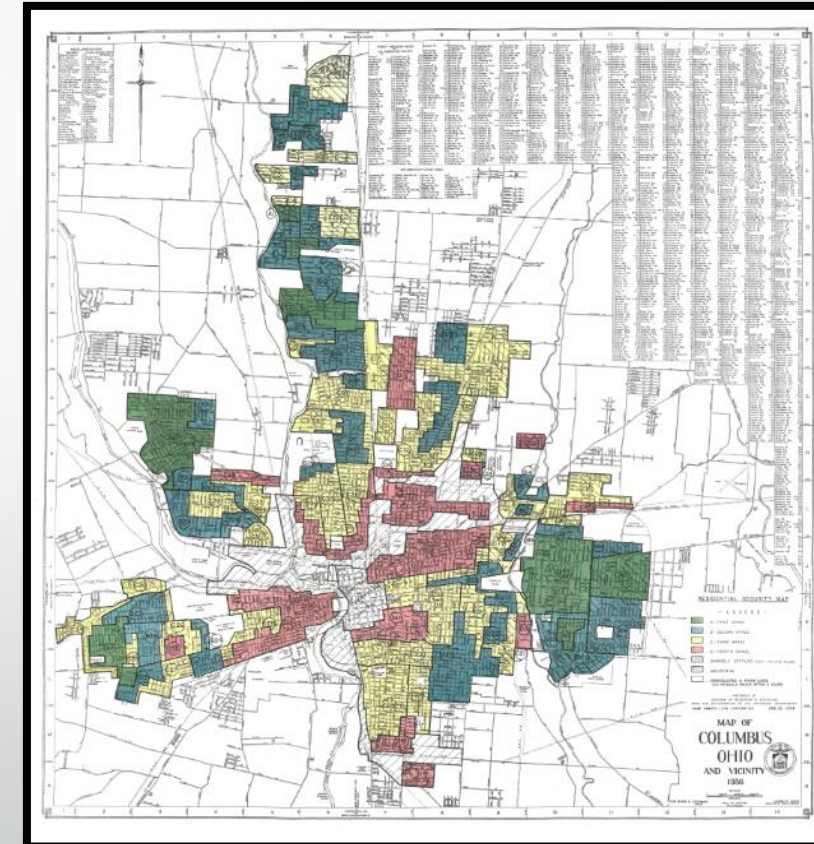


Table DP05

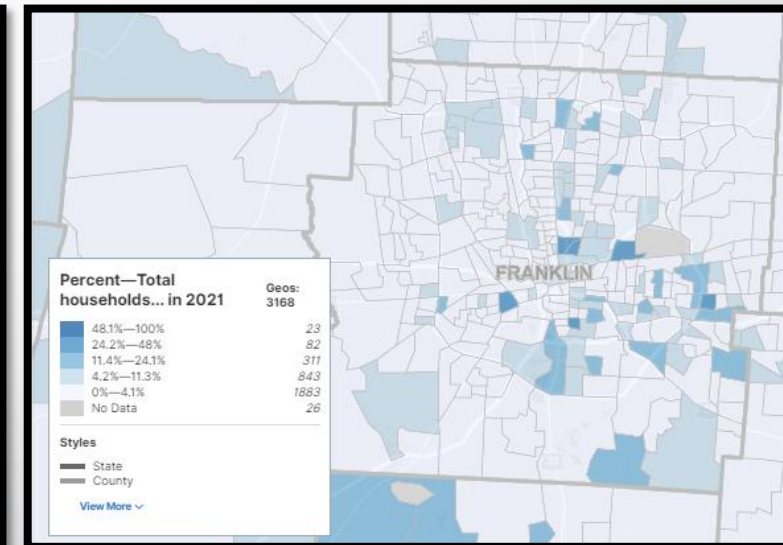
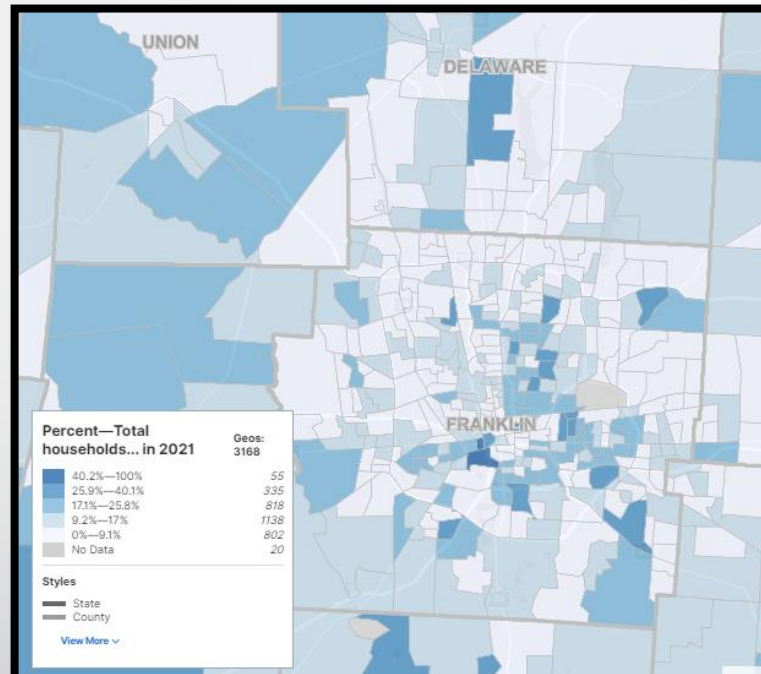
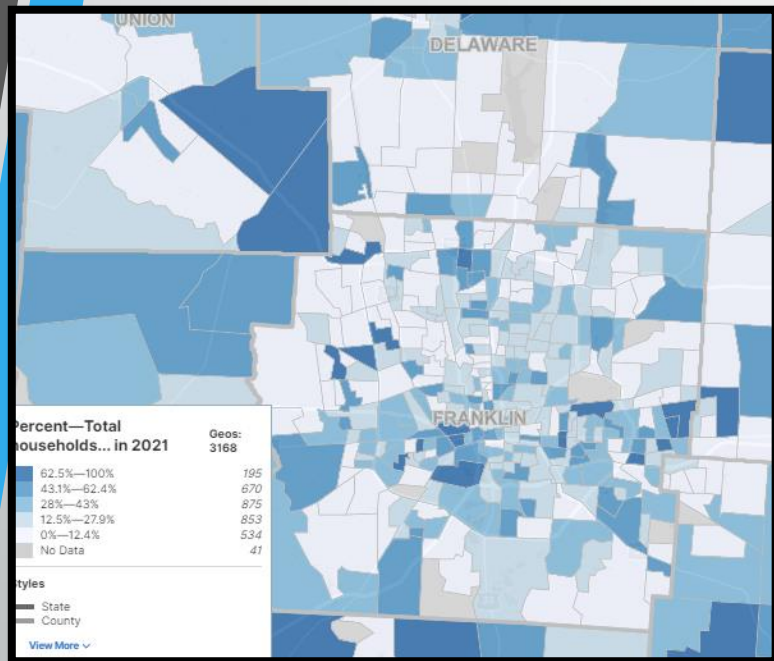
United States®  
**Census**  
Bureau



<https://guides.osu.edu/maps/redlining>

# Franklin County % No Internet

## Low Income      Middle Income      High Income



ACS 2021 5-Year Data, Table S2801

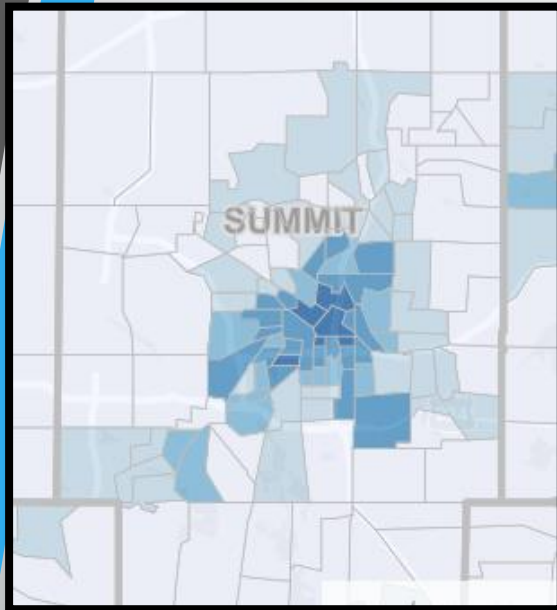
United States<sup>®</sup>  
**Census**  
Bureau



# Summit County

## % below poverty % Black

## Akron Redlining



ACS 2021 5-Year Table S1701

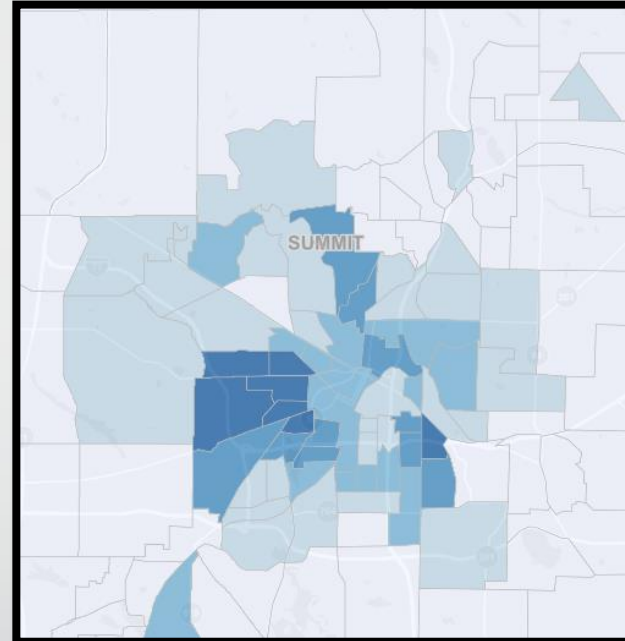
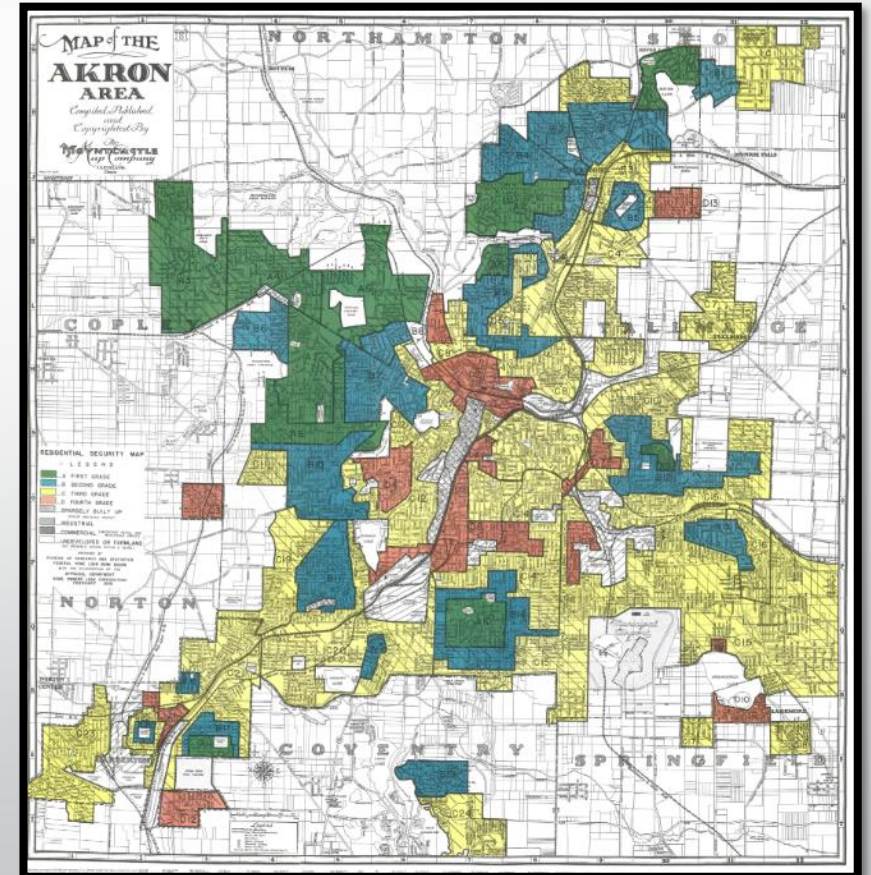


Table DP05

United States<sup>®</sup>  
**Census**  
Bureau

Amy R. Sheon, PhD, MPH

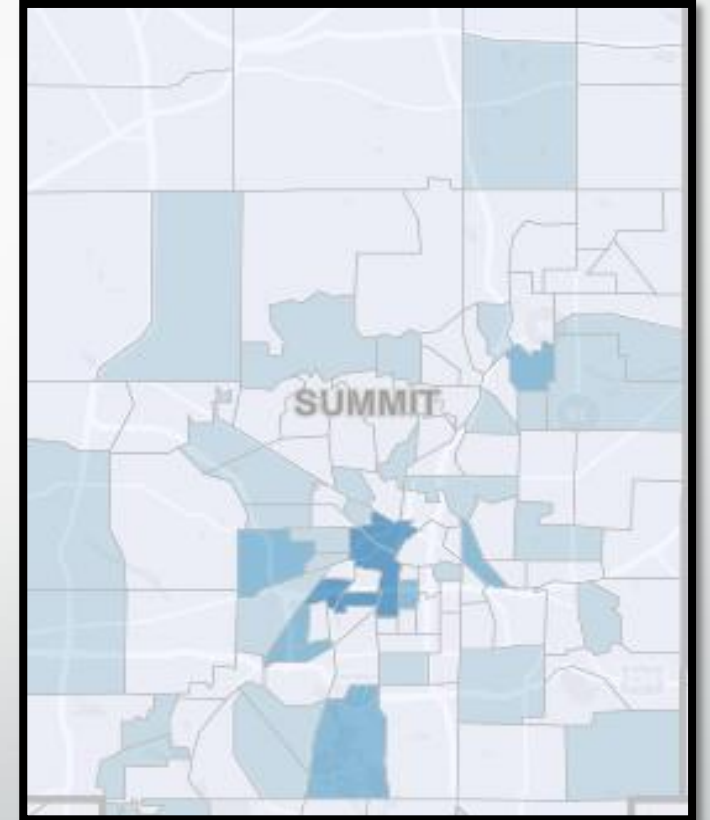
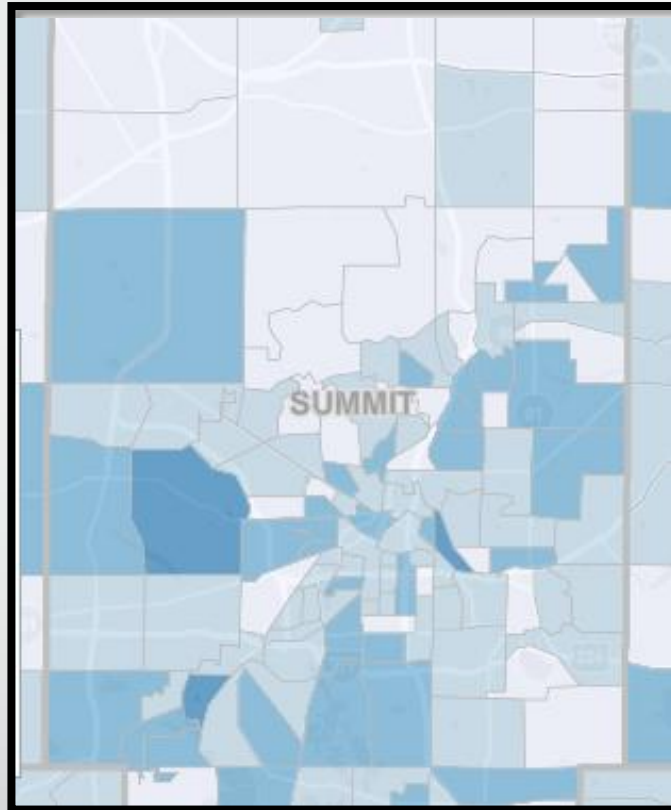
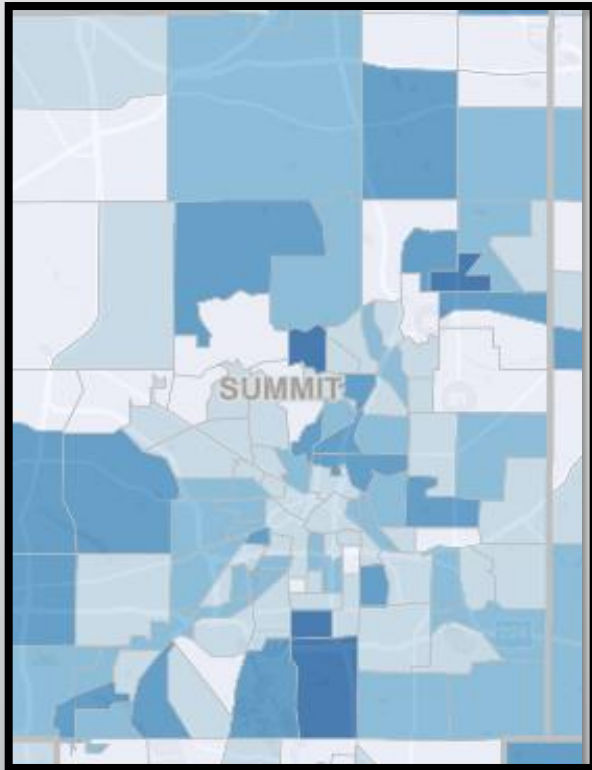


<https://guides.osu.edu/maps/redlining>  
Public Health Innovators, LLC 2/16/2023 64



# Summit County, % No Internet

## Low Income      Middle Income      High Income



ACS 2021 5-Year Data, Table S2801



Thank You!

Amy R. Sheon, PHD, MPH

[amy@publichealthinnovators.com](mailto:amy@publichealthinnovators.com)

(646)-9-PHI LLC (974-4552)



President &  
Digital Health Equity Consultant

[Publichealthinnovators.com](http://Publichealthinnovators.com)